HIO STATE
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LIBRA
Plumbing, Heating and Air Conditioning

WHERE A "STRETCH" IN TIME STRETCHES FUEL

HOFFMAN No. 8 TRAP
All-bronze body —for medium pressures. Renewable Seat and Thermostat.

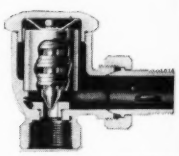
You've got to stretch your fuel these days! To do it, remember that the *quality* of your heating equipment determines to a large degree the *quantity* of fuel burned.

In the matter of steam traps, for example. A Hoffman Trap is operated by a thermostat in which multiple diaphragms expand and contract to open or close the trap port. The thermostat must *instantly* expand, or "stretch," when touched by live steam, or steam is lost and fuel wasted. It should also contract promptly when steam has condensed to permit condensate drainage. The thermostat must be able to perform these operations an infinite number of times without losing flexibility.

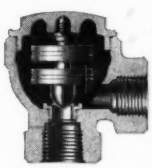
Hoffman Traps have thermostats made of a non-corrosive metal, full of spring, long-lived in spite of countless flexings and high temperatures. Diaphragm material is laboratory tested under conditions more severe than ever encountered in actual service. In these traps you get the "stretch" which means efficient operation and steam conservation.

To be sure that *your* heating system is not suffering from lack of "stretch," do this—check your steam traps and replace worn-out units at once. When replacing, make your selection from Hoffman's complete line of steam-saving specialties . . . known and respected everywhere for quality of material, excellence of design and painstaking workmanship. Hoffman Traps are so constructed that parts subject to wear can be easily and inexpensively renewed.

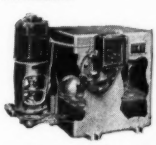
When you specify Hoffman you can be sure that you are getting a three-way "stretch" . . . in fuel, in steam utilization and in service life. Hoffman engineers are available for consultation at all times. Write for literature.



HOFFMAN No. 9H TRAP
A bronze-bodied unit for high pressure work. Renewable Seat and Thermostat.



HOFFMAN No. 17-D TRAP
A low pressure cast iron trap with renewable Seat and Thermostat.



HOFFMAN-ECONOMY CONDENSATION PUMPS
Available in a full range of pressures and capacities.

A few of the many places where Hoffman Steam Specialties are helping the war effort

WAR PLANTS

Chrysler Corp. • Studebaker Corp.
Sioux Ordnance Plant • Pueblo Ordnance Plant • Nebraska Ordnance Plant

ARMY AND NAVY HOSPITALS

Fort Riley • Valley Forge
Nichols Hospital • Fort Francis E. Warren Mobilization Hospital

AIR BASES, FIELDS AND SCHOOLS

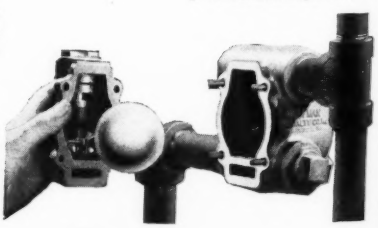
Topeka • Lincoln • Pauline • Deming
Oklahoma City • Victoria • Alliance

CAMPS

Camp Atterbury • Camp Breckenridge
Camp Clark • Camp Gruber
Camp Davis • Camp Blanding

SHIPYARDS

Philadelphia Navy Yard • Norfolk Navy Yard
Brooklyn Navy Yard • Ingalls Shipbuilding Co.
American Shipbuilding Co.
General Engineering & Dry Dock Co.
Pullman Standard Car Mfg. Co.



HOFFMAN 50 SERIES TRAP
A heavy duty unit with all working parts mounted on the cover. Can be easily serviced without breaking pipe connections.

HOFFMAN

HOFFMAN SPECIALTY CO., 1001 YORK ST., DEPT. RX-6, INDIANAPOLIS, INDIANA

Makers of Hoffman Valves, Traps and Pumps —sold everywhere by leading wholesalers of Heating and Plumbing equipment.

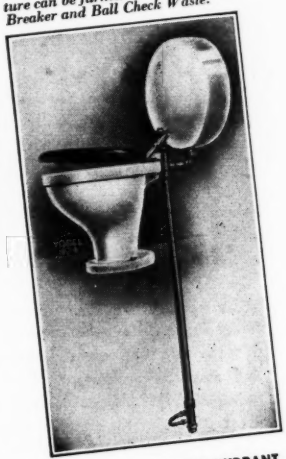
Controlled Heating

STEAM / HOT WATER

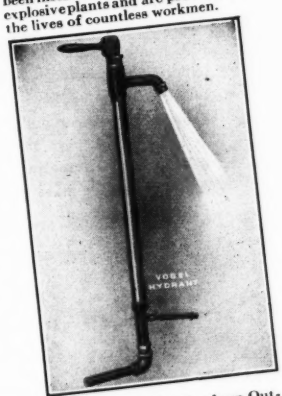
We know what Vogel Products have to stand...

so we build them accordingly

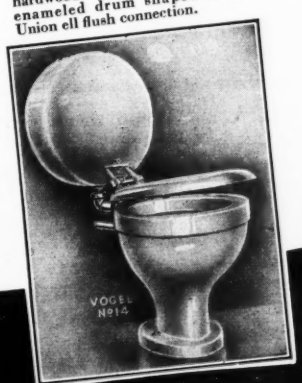
VOGEL NUMBER 4. Vitreous china bowl with top supply, painted white enameled drum shaped pressure tank, reinforced hardwood seat, union ell flush connection. *This fixture can be furnished with Vacuum Breaker and Ball Check Waste.*



VOGEL FROST-PROOF HYDRANT. Thousands of these Hydrants have been installed in chemical and high explosive plants and are protecting the lives of countless workmen.



VOGEL NUMBER 14. Southern Outfit. Vitreous china top supply bowl, heavy brass flush valve, reinforced hardwood seat, painted white enameled drum shaped tank. Union ell flush connection.



On most installations, we know VOGEL Closets and Hydrants are going to get mighty little attention. They are going to have to operate continuously, and must give all kinds of extra service without repairs or adjustments.

So—we build them accordingly—fewest possible moving parts—simplicity of construction and finest materials. Over a period of 35 years and through hundreds of thousands of installations, VOGEL Closets and Hydrants have proved to be the most durable, economical and efficient outfits you can install.

VOGEL PATENTED

Products

JOSEPH A. VOGEL COMPANY

WILMINGTON DELAWARE

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June, 1943

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This Month

Main theme of this issue is fuel conservation—a program vastly more important this year than last because coal, as well as gas and oil, is now a definitely critical material. Every industry member has a place in this job. The subject is thoroughly explored in the editorial and feature sections.

* * *

Contractors, wholesalers and manufacturers, may expect a flood of rewritten priority orders between now and July 1. For example, P-84 is now being circulated through WPB departments; the Plumbing and Heating Division hopes that it can be issued around June 10 or 12. An accompanying order is a revision of L-79, which may come out the same day as P-84.

* * *

A number of other orders will have to do with products and their manufacture. One order concerns water heaters and range boilers. It is hoped and expected that the revised order will permit the making of enough of these items to meet essential civilian demands.—Ed.

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DOMESTIC ENGINEERING

Vol. 161; No. 6; Whole No. 2112

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WEISWAY V DELUXE

SELL THIS BETTER WAR-TIME CABINET SHOWER

★ *That builds Good Will as well as Profits...* ★

Weisway V Deluxe is a cabinet shower *worthy of the plumbing business.*

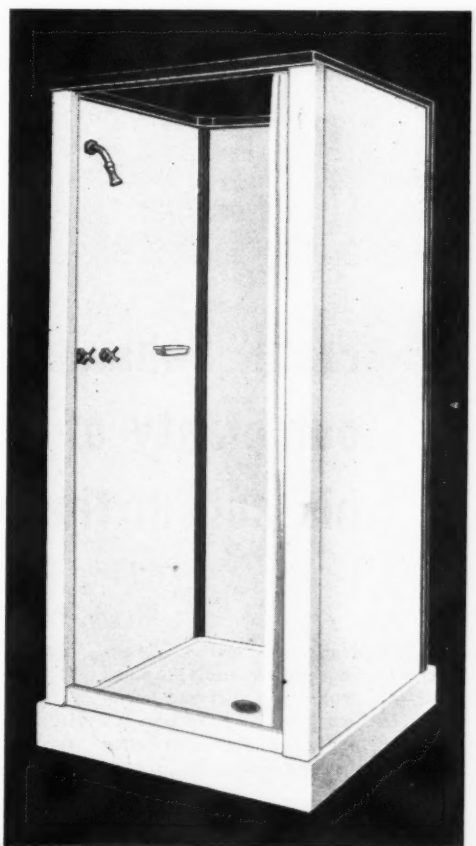
While saving steel for war uses, we have kept in mind *your* reputation as a master plumber — and our own record of quality manufacture.

The V Deluxe contains less than one pound of critical metal. Yet Weisway's skill in engineering and in adapting new materials, plus Weisway's insistence on a quality product, have developed a cabinet shower that assures greater satisfaction and service.

Weisway V Deluxe is not a make-shift, expected to last only for the emergency. It is a cabinet shower which you can sell with pride, and install with assurance that its service will build good will for you tomorrow, while it offers a real profit opportunity today.

Remodeled private homes and new homes to be built this year will be more than temporary, and deserve a better cabinet shower. Weisway V Deluxe is especially designed to meet these bath requirements. Prompt shipment can be made.

Ask your jobber, or write now for details.

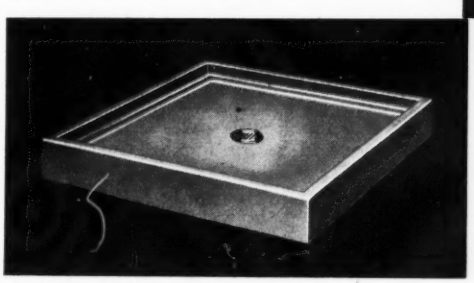


HENRY WEIS MFG. COMPANY INC. (Est. 1876)
604 Oak St., Elkhart, Ind.

★

The new Plastex Receptor, an exclusive feature of Weisway V Deluxe, is high pressure molded of chemically blended materials, containing no cement... lighter in weight, stronger, more durable, easier to handle and install.

★



WEISWAY *Cabinet Showers*

Here he is showing Radioman Bob —recently home on furlough—how one of the special heat control mechanisms, used by American Brass, operates to produce metal of the correct temper.

Frank Schieder is turning out plenty of brass for his son in the Navy

Frank Schieder doesn't need an "E" pennant to remind him of the importance of all-out production for war needs (although he's proud of the one his plant is flying). He has an even better reminder in his son, Bob... Radioman, U. S. Navy.

It's like that, too, with thousands of other American Brass workers who have sons and brothers and other kith and kin in the armed forces. They aren't producing just the finest copper and brass, but war materials for *them* . . . to help speed the day of victory. Over 3,500 former fellow workers, themselves, are now serving with Uncle Sam.

You'll find the same urge to produce for victory in all thirteen plants which The American Brass Company operates in the U. S. A. and Canada. They are turning out the greatest volume of copper and brass in the company's history—and expect to produce still more... all of it for war use. They consider their Army-Navy "E" pennants only a challenge.

United America is pulling together

As citizens and as a nation, American people are united in fighting this war—on the battle front and on the home front . . . buying War Bonds . . . conserving rationed materials . . . making the best of shortages . . . doing their part wherever they can.

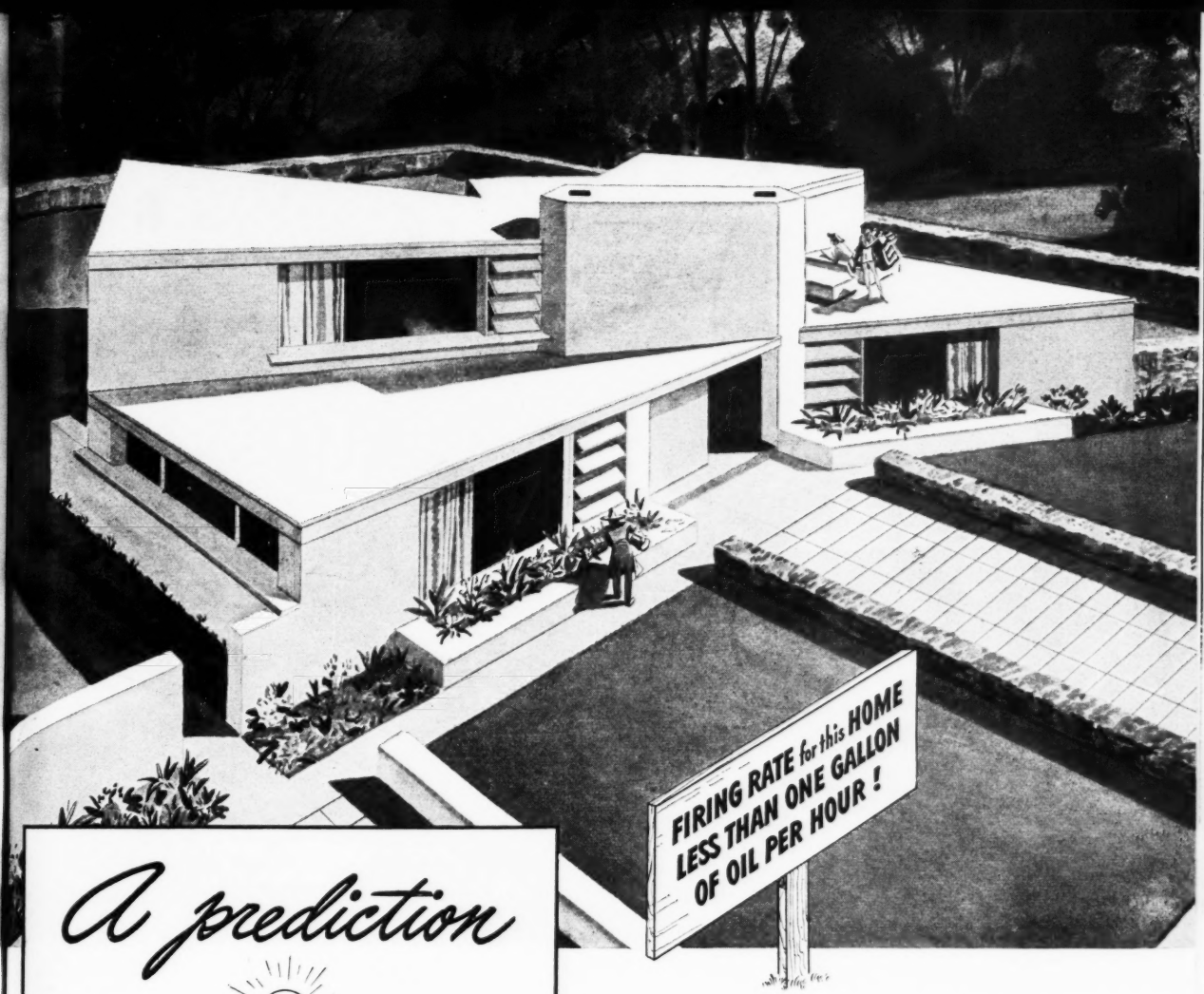
For instance, plumbers and heating contractors, despite drastically curtailed supplies of plumbing and heating materials, are doing a great job of maintaining health and comfort on the civilian front —both residential and commercial. Through inspection, servicing and available repairs, they are preventing many a small trouble from becoming serious.

4342E

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: Anaconda American Brass Ltd., *New Toronto, Ont.*

ANACONDA

Anaconda Copper & Brass



A prediction

After Victory a housing boom of unprecedented proportions is confidently expected.

Government estimates place the investment in new housing immediately following the war at billions of dollars.

Most of this money will be spent for well-built and well-insulated *small* homes. And, correspondingly, the demand will be for small, economical heating units especially designed for this service, and with firing rates as low as one-half gallon of oil per hour.

A GREAT OPPORTUNITY

The forward-looking merchandiser of automatic heating equipment will be alert to this opportunity. Conscious of the limitations of other types of power burners, he will turn to the Timken Wall-Flame oil burner . . . the *only type of power burner capable of operating efficiently, dependably and quietly at firing rates as low as ONE-THIRD OF A GALLON OF OIL PER HOUR.*

He will apply for the Timken dealership franchise *now.* He will *plan ahead* and *work ahead* to develop his list of prospective home builders. He will contact local architects and building contractors *ahead of time* so that he will be all set to begin Timken installations immediately when home building is given the "green light."

WHOLE-HEARTED BACKING

We at Timken are looking confidently to the future. We are keeping the TIMKEN name prominently before the public with hard-hitting magazine and newspaper advertising in all the principal oil heating markets. Everything has been done and will be done to help the Timken Dealers weather the war period . . . direct mail programs, special service promotions, service handbooks, new accessories to sell, personal help from T.S.A. field men, and everything else aggressive dealers need and want. Post-war equipment planning is already in action and literature on Timken-equipped post-war homes is in the hands of prospective home builders.

If you are looking for a profitable present *and* post-war opportunity, write Timken today!

ARMY E NAVY
For Production "Well Done"

TIMKEN *Silent Automatic*

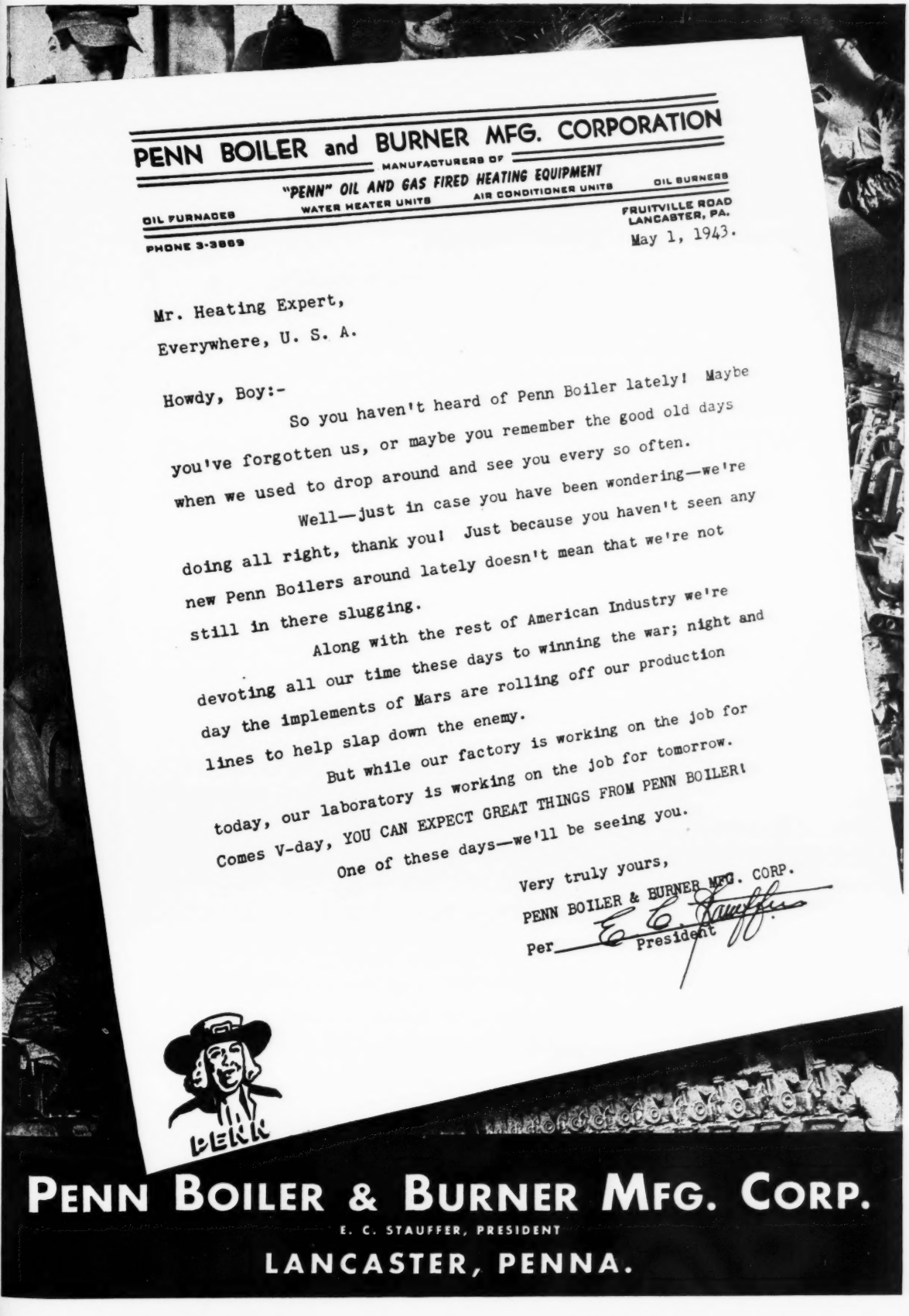
OIL HEATING PRODUCTS FOR THE HOME

Division of THE TIMKEN-DETROIT AXLE COMPANY, Detroit, Michigan

M-H Electrons are coming to control the heating of homes — to dispense carefree indoor comfort, regulate heating effortlessly, to air condition rooms. Now M-H Electrons are at war, performing miracles in planes, tanks and ships for our armed forces. These same miracles, or modifications of them, will be available to home owners everywhere after peace comes. Minneapolis-Honeywell Regulator Company, 2801 Fourth Ave. S., Minneapolis, Minn. In Canada: Toronto, Ontario. In Europe: London, England; Stockholm, Sweden.

★ *Listen:* "JOHN FREEDOM" Blue Network Coast to Coast every Wednesday, 9:00 to 9:30 P.M. Eastern War Time; or see your newspaper. *"The Most Dramatic Show on the Air"*

MINNEAPOLIS-HONEYWELL
CONTROL *Systems*



PENN BOILER and BURNER MFG. CORPORATION

MANUFACTURERS OF

"PENN" OIL AND GAS FIRED HEATING EQUIPMENT

OIL FURNACES WATER HEATER UNITS AIR CONDITIONER UNITS OIL BURNERS

PHONE 3-3869

FRUITVILLE ROAD
LANCASTER, PA.

May 1, 1943.

Mr. Heating Expert,

Everywhere, U. S. A.

Howdy, Boy:-

So you haven't heard of Penn Boiler lately! Maybe you've forgotten us, or maybe you remember the good old days when we used to drop around and see you every so often.

Well—just in case you have been wondering—we're doing all right, thank you! Just because you haven't seen any new Penn Boilers around lately doesn't mean that we're not still in there slugging.

Along with the rest of American Industry we're devoting all our time these days to winning the war; night and day the implements of Mars are rolling off our production lines to help slap down the enemy.

But while our factory is working on the job for today, our laboratory is working on the job for tomorrow. Comes V-day, YOU CAN EXPECT GREAT THINGS FROM PENN BOILER!

One of these days—we'll be seeing you.

Very truly yours,

PENN BOILER & BURNER MFG. CORP.

Per E. C. Stauffer President

PENN BOILER & BURNER MFG. CORP.

E. C. STAUFFER, PRESIDENT

LANCASTER, PENNA.

MANY WOULD "*Swap*" PLACES WITH A

MYER'S DEALER

You will find no "repair orphans" in Myers line of Farm Operating Equipment. Repairs have always been available during the life of Myers Equipment and we expect to continue this service. Repairs and Replacement Parts may be stocked and sold, without rationing, to keep vital equipment going. Myers dealers, going after this profitable business, are not only rendering a patriotic service, but are laying the groundwork for a substantial post-war business—After Victory.

The Myers Line Includes:

Reciprocating and EJECTO Type Pumps and Automatic Water Systems for deep and shallow wells ★ Hand and Windmill Pumps ★ Pump Jacks, Cylinders and Accessories ★ Hand and Power Sprayers ★ Hay and Grain Unloading Tools ★ Barn and Garage Door Hangers

Manufacturers of Farm Operating Equipment

THE F. E. MYERS & BRO. CO.

159 FOURTH ST., ASHLAND, OHIO

The Stuff That Dreams Are Made Of

You Are The WONS* With a Big Job To Do

The WONS* in their kitchen aprons are keeping step with all the other women in uniform who are serving the Nation at war. Ever since the Pilgrim Mothers landed at Plymouth Rock, this simple, unsung uniform has been the symbol of one of women's vital services to the Nation — feeding the family.

this service been more than now, ord shortages

are creating problems which the WONS* are meeting valiantly.

And in the days to come, along with this new efficiency in planning proper foods, you are the WONS* who will logically demand more efficient kitchens—the kind of efficiency that Youngstown Planned Kitchens can give.

Youngstown Planned Kitchens will be at your service

*Women's Own Nutri... supplies the hea... that keeps th...

• MULLINS MANU... WARREN, O...

EACH day brings us nearer to that brave new world of tomorrow — a world that is vastly and purely exciting, like a new planet seen through ... glass.

YPS designers and engineers are already planning new kitchen conveniences and new kitchen beauty for your present home or the new one you are planning.

...e will be a YPS all-steel ... to fit your budget — ...e worth waiting ...

...P. ...ohio

This Battle Station is Closer to the Fighting Front than You May Think!

While Youngstown Pressed Steel is busy manufacturing the stuff that helps win the war, its executives are remembering that women still dream "kitchen dreams" and are interested in the stuff that can make those dreams a reality.

The story of Youngstown Pressed Steel kitchens is reaching millions of these women every month through National magazines — keeping Youngstown Pressed Steel kitchens in their minds until the day when they are again on display on the dealer's floor.

Plumbing Contractors can cash in on this investment in sales protection which Youngstown Pressed Steel is making for their mutual benefit by including Youngstown Pressed Steel kitchens in their plans for post-war business.

These advertisements are appearing in full color in: The American Home, Better Homes and Gardens, Good Housekeeping, Ladies' Home Journal and Parents' Magazine.

Combined circulation over 13,000,000.

IN RECOGNITION OF QUALITY PRODUCTION

YOUNGSTOWN PRESSED STEEL DIVISION

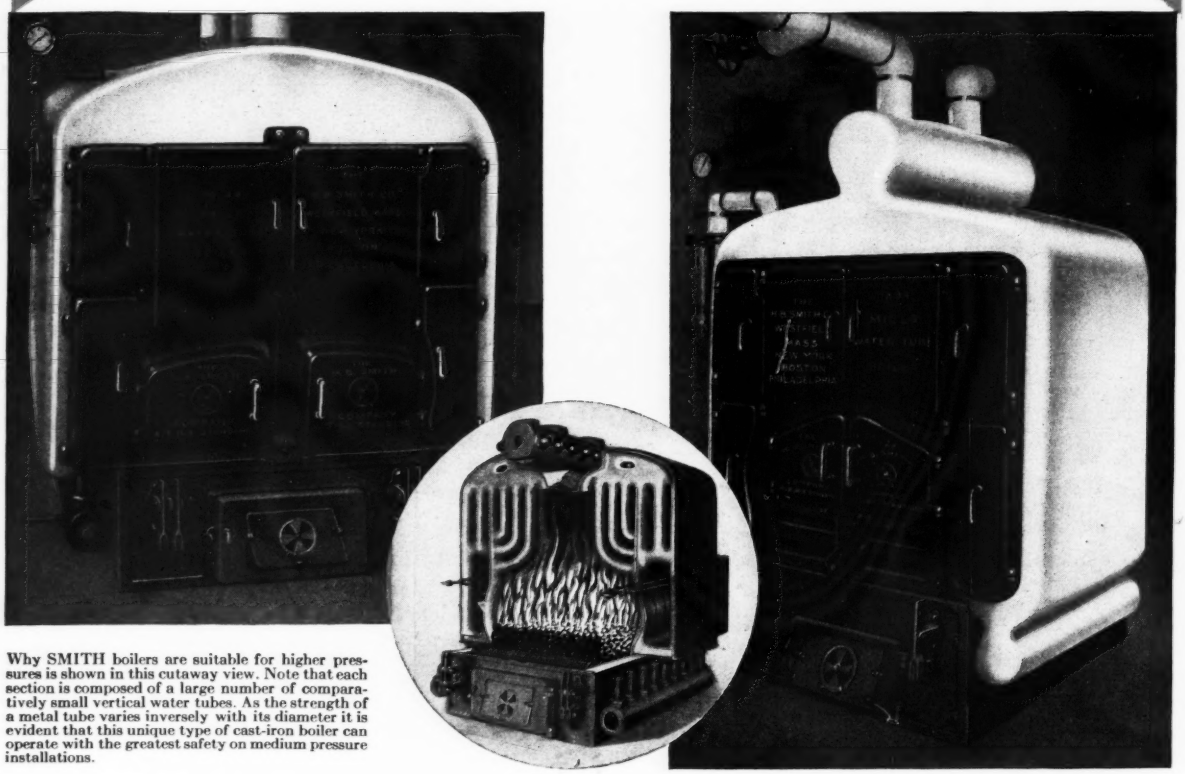
MULLINS MANUFACTURING CORP. • WARREN, OHIO

IT'S OUR WAR • LET'S FIGHT IT NOW

BUY WAR BONI...

Immediately Available FOR STEAM PRESSURES to 75 lbs.

H. B. Smith BOILERS



Why SMITH boilers are suitable for higher pressures is shown in this cutaway view. Note that each section is composed of a large number of comparatively small vertical water tubes. As the strength of a metal tube varies inversely with its diameter it is evident that this unique type of cast-iron boiler can operate with the greatest safety on medium pressure installations.

IF you need a new boiler for medium pressure work that is essential to the war effort . . . whether it be for the armed services or for war production . . . and need it *fast*, why not consider an H. B. SMITH Cast Iron Boiler?

Already many of these boilers are being operated by the Armed Services at 30, 40 and 50 lbs. steam pressure for sterilization purposes in many mess halls and hospitals throughout the country. Manufacturers of war products are likewise using these boilers for process steam or where high temperature water is required to 300°.

Constructed of tough gray iron, built for use with any fuel, H. B. SMITH boilers for steam pressures above 15 lbs. merit the attention of engineers who want to get things done . . . today!

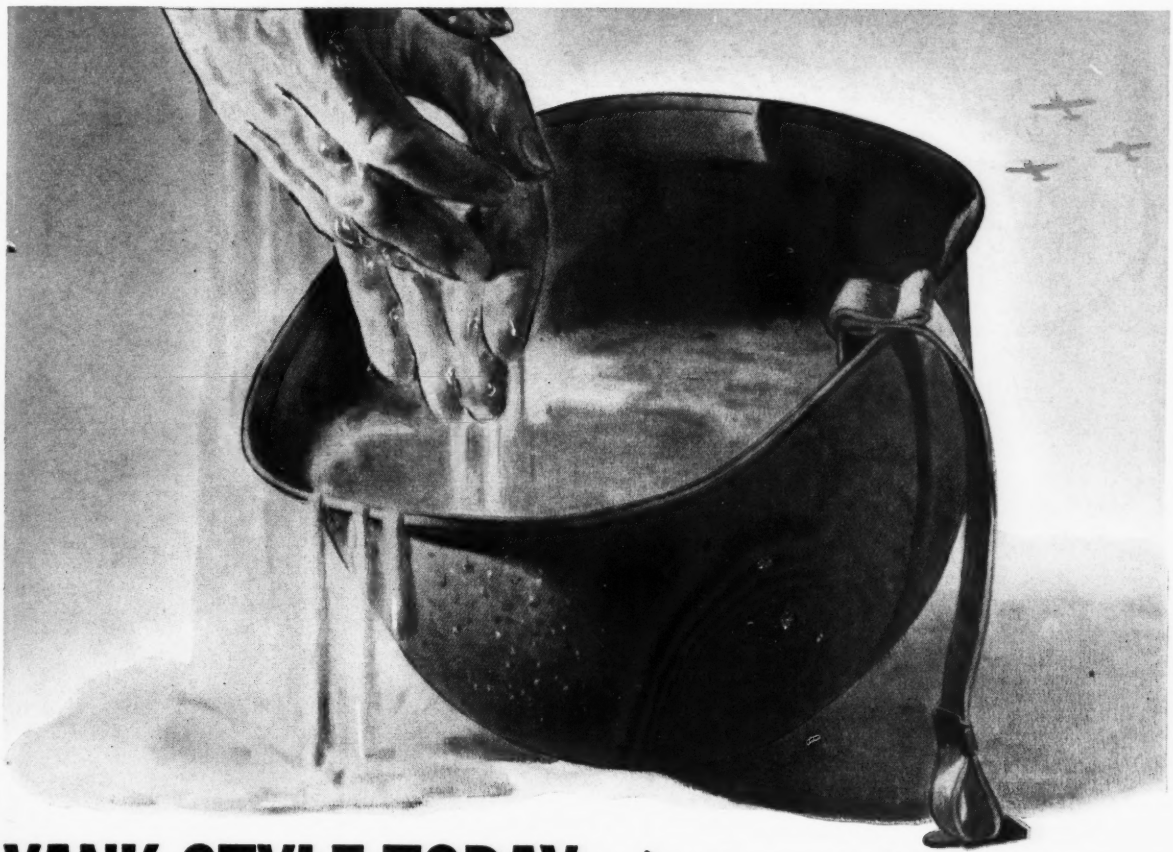
Special High Pressure MILLS and SMITH boilers are available (where provisions of the A.S.M.E. code or state statutes do not restrict their use) for the following capacities and pressures:

	Capacities to Hand fired	Capacities to Auto fired	Tested at	Maximum working pressure
#24 Hy-Test	15 H.P.	20 H.P.	300 lbs.	75 lbs.
#34 Hy-Test	40 H.P.	50 H.P.	200 lbs.	50 lbs.
#44 Hy-Test	75 H.P.	100 H.P.	200 lbs.	50 lbs.
#60 Smith	150 H.P.	200 H.P.	100 lbs.	25 lbs.

Information on other H. B. SMITH Water Tube Boilers suitable for steam pressures above 15 lbs. will gladly be made available upon request.

THE H. B. SMITH CO., INC., WESTFIELD, MASS.

BOSTON NEW YORK PHILADELPHIA



YANK STYLE TODAY—*but not tomorrow*

Today, Son, your "tin hat" in Tunisia must serve you in many ways. Yes, Yank style, even as a primitive wash bowl.

Tomorrow that experience will be just a segment of your memories. When you come home to America's modern way of life you can expect many new plumbing products ready for your use. Improvements here? Lots of them!

Look for that newest improvement in hot water tanks, the Porcel-CLAD with its gleaming, sanitary, corrosion-proof, porcelain-enameled surfaces.

Yes, Porcel-CLAD is a *better* hot water tank and it is ready for you now,—proved and approved.

PORCELAIN STEELS, INC. • CLEVELAND, OHIO

Porcel-CLAD
PORCELAIN ENAMELED INSIDE AND OUT
HOT WATER TANKS

Porcel-CLAD Hot Water Tanks, one-piece welded construction, conform to the National Bureau of Standards' Recommended Commercial Standard, TS-3488. War workers' houses, being constructed by FPHA in highly corrosive water areas today, have first call on our production.

Only a limited quantity is available now for replacement purposes.

...and our kitchen has PERMA-GLOSS!

"Now here's one thing I really appreciate. It may look like an ordinary sink and tray to you, but I've used it for six months and, Mary, it's the honest-to-goodness answer to a housewife's prayer. It's easy to keep clean, it can't be scratched or marred and it won't stain! Why don't you tell Harry about Perma-Gloss!

"You can bet your next War Bond that I'm going to insist on Perma-Gloss in the kitchen and laundry of our new home!"

Today, Perma-Gloss sinks, through their installation in war housing units, dormitories and camps, are making thousands of new friends. These "for the duration" homes may be temporary, but daily contact with Perma-Gloss Sanitary Ware is making Mr. & Mrs. War Worker — your eventual customer — conscious of its all-around high qualities.

Perma-Gloss is light in weight—easy to install . . . is strong and durable . . . will not dunt or craze . . . is acid proof throughout — not merely acid resistant . . . has no enamel to peel or chip . . . no iron to rust . . . will withstand thermal shock . . . and is inexpensive.

For detailed information, send for our latest Perma-Gloss bulletin.

General Ceramics Co.

GENERAL CERAMICS COMPANY • SANITARY WARE •

SANITARY WARE DIVISION
METUCHEN NEW JERSEY

3800

SARAN TUBING AND FITTINGS EASILY AND QUICKLY INSTALLED

Installation of saran tubing and fittings is easily accomplished with standard plumbing equipment. Exceptional flexibility of the durable tubing simplifies operations in many situations normally requiring the use of extra joints and elbows. Flaring, bending and forming saran tubing are quickly mastered by workmen. Saran fittings are available for all tubing sizes—ranging from 3/8" to 3/4" O.D.

Saran Tubing INSTALLED IN 15,000 WAR HOUSING UNITS!

Saran tubing and fittings make their bow in the domestic plumbing industry this month. These revolutionary plastic products are being installed in 15,000 war housing units. Extensive development tests show that saran is most satisfactory on cold water lines and thermostatically controlled hot water lines. This initial installation alone saves 1,000 tons of steel and 120,000 metal fittings.

Saran, a Dow development, possesses chemical resistance, flexibility and toughness to a degree found in few comparable materials. Tubing and fittings are now being produced by fabricators who have worked closely with Dow in developing these products.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York • St. Louis • Chicago • Houston • San Francisco • Los Angeles • Seattle

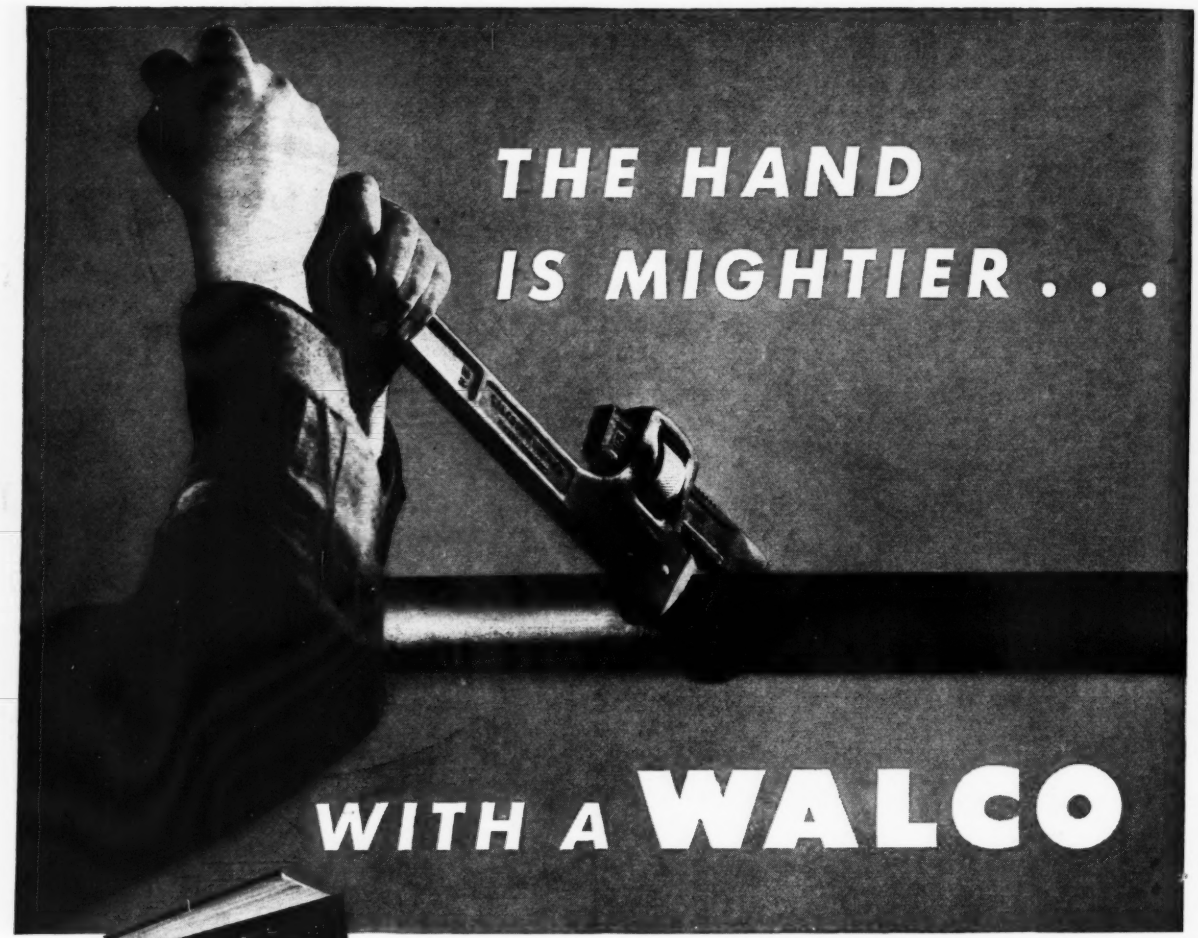
SARAN

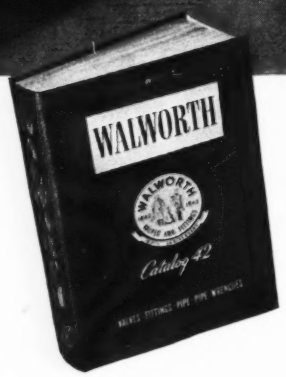
DOW PLASTICS

STYRON • ETHOCEL

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY





You'll find pertinent information on Walworth's complete line of valves, fittings, pipe, and pipe wrenches in the new Walworth Catalog 42. Included are 78 pages of practical engineering data that simplify valve selection and make piping layouts easier. Write, on business stationery, for your free copy. Address: Walworth Company, 60 East 42nd Street, New York, N. Y., Department 63.

Every part of a Walco wrench is designed and built for strength and safety of operation. The Walco grips and holds no matter how hard you pull. All parts of this modern wrench are **made entirely of steel.** The handle and both jaws are made of drop forged steel. The housing and handle are forged from a single piece of steel. Both jaws are carefully machined, and all parts are heat treated to provide toughness, uniformity, and strength. The cross locked lower insert jaw, which is an exclusive Walco feature, makes it easy to remove a worn lower jaw and insert a new one. The spring may be quickly and easily replaced without the use of tools. These features prolong the life of the wrench indefinitely.

Users everywhere testify to the fact that Walco is the world's strongest wrench, the safest, and by far the least expensive to use. It is made by Walworth Company, manufacturers of valves and fittings for more than a century.

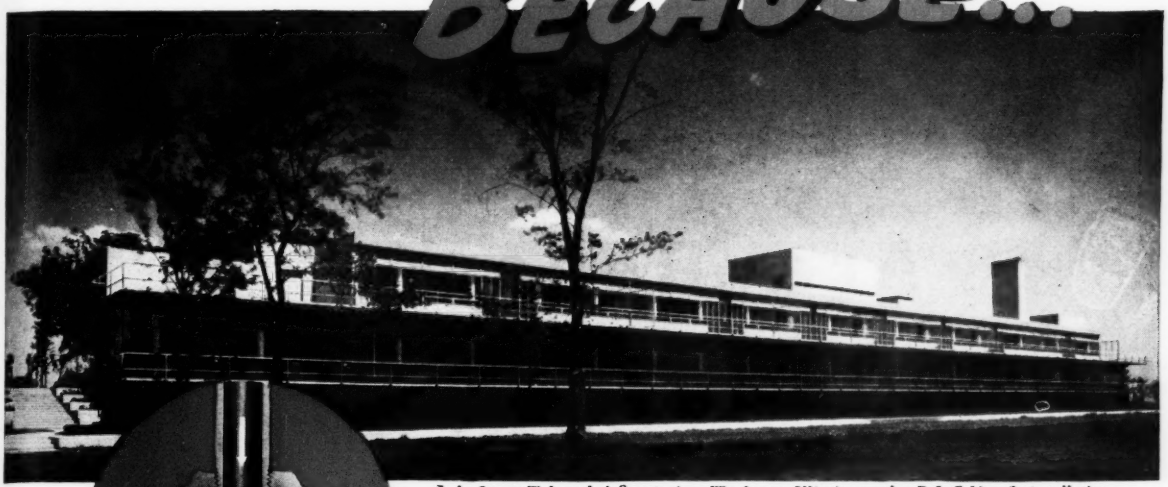
BOSTON WORKS
KEWANEE WORKS

WALWORTH
valves AND fittings

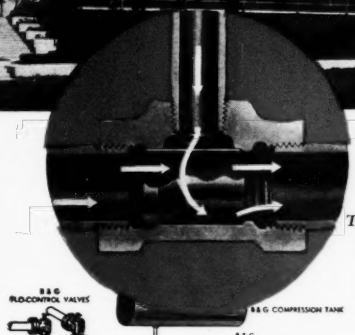
WALWORTH ★ VALVES AND FITTINGS ★ ESTABLISHED 1842

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

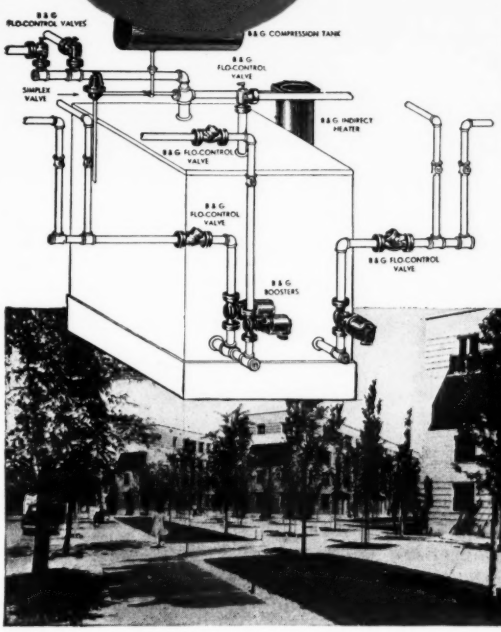
CHOSEN FOR HOSPITALS • HOUSING PROJECTS AND INSTITUTIONS BECAUSE...



Lake County Tuberculosis Sanatarium, Waukegan, Illinois—another B & G Monoflo installation.



The B & G Monoflo Fitting


B & G FLO-CONTROL VALVES
B & G COMPRESSION TANK
B & G FLO-CONTROL VALVE
SIMPLEX VALVE
B & G INDIRECT HEATER
B & G FLO-CONTROL VALVE
B & G FLO-CONTROL VALVE
B & G FLO-CONTROL VALVE
B & G BOOSTERS

Ida B. Wells Housing Project, Chicago, Illinois, with over a quarter million sq. ft. of Monoflo-fed radiation.

. . . B & G Monoflo Heating is an easily designed, easily installed system of VARIABLE temperatures, controlled by a minimum of simplest equipment.

For the large heating installation, the B & G Monoflo System has so many obvious advantages that many of our most modern institutions, industrial plants and housing projects are now equipped with it. Where this system is installed, the usual causes of fuel waste are avoided—doubly important in this day of fuel shortage.

The B & G Monoflo System can deliver *as many different temperatures as there are zones*—thus permitting room temperatures to be adjusted to various occupational activities. It automatically matches the heat supply to the weather, using *just enough* fuel to maintain the desired temperature.

This smooth modulation obviously means greater comfort and utmost economy of fuel. Equally important is the simplicity of equipment and piping which translates into low initial cost, low maintenance and dependable performance.

For complete design information on B & G Monoflo Systems, write for the B & G Handbook. We will also send a new booklet, which shows why Forced Hot Water Heating is today's most desirable heating method.

B&G

BELL & GOSSETT COMPANY

MORTON GROVE, ILLINOIS *(Suburb of Chicago)*

Canadian Licensee: S. A. Armstrong, Ltd., 115 Dupont St., Toronto

MONOFLO SYSTEM

F&W WATER SYSTEMS

Are Dependable

- **SIMPLE**
- **DEPENDABLE**
- **QUIET**
- **EFFICIENT**

Dependability is the most sought for quality in any piece of equipment during these critical war days.

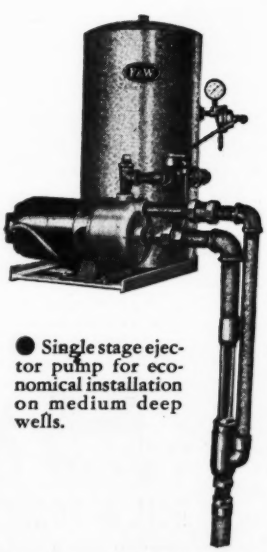
Dependability is the outstanding characteristic of F & W ejector water systems. Their record for continuous satisfactory operation, with a minimum of attention, has won the high regard of dealers and users alike.

Because of the necessity of "more water to raise more food", and the importance of saving manpower on farms WPB has authorized us to manufacture a limited number of F & W systems this year. These are being distributed, as equitably as possible and under established regulations.

Compact, simplified design of F & W ejector pumps, eliminates many moving parts, makes for greater dependability. No belts, no gears, no rods in well; no lubrication required because bearings are packed for permanent service. Models for shallow wells, medium deep and deep wells. F & W deep well ejector pumps have automatic control valve which adjusts itself to varying well depths.

● For shallow wells, this streamlined "Bullet" model (above) is compact, simple, efficient.

● New multi-stage ejector pump for maximum efficiency from deeper wells.



● Single stage ejector pump for economical installation on medium deep wells.

We have greatly expanded our facilities for direct war production so, when victory is won, we shall be better prepared than ever to produce our complete line of farm and household pumps . . . also Star Zephyr windmills.

HELP FINANCE VICTORY • BUY WAR BONDS AND STAMPS

FLINT & WALLING MFG. CO., INC.

In our 77th Year

676 OAK STREET, KENDALLVILLE, INDIANA

F&W

Now! Nation-Wide Prompt Delivery on OLSON-ITE Plastic Seats

Regardless of Your Location..There's An OLSON-ITE Plastic Seat Representative Nearby..Ready To Serve You Promptly

1. JOHN LIVINGSTONE & CO. 164 Jackson St. Seattle, Wash.
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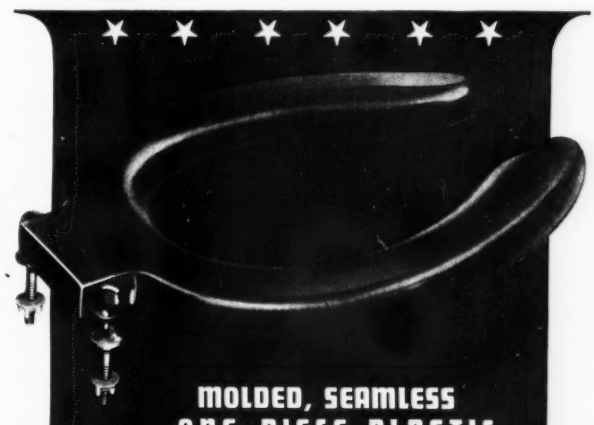
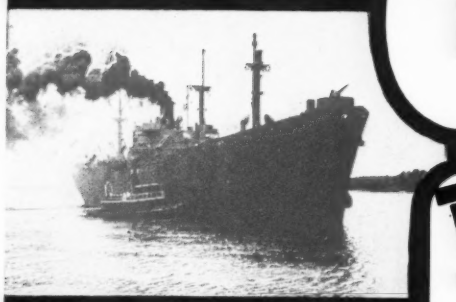


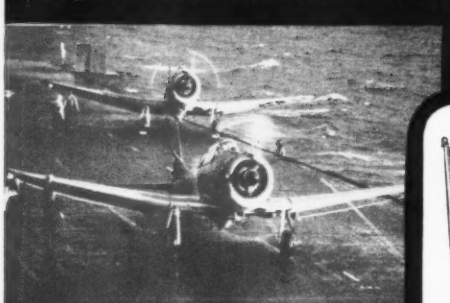
MOLDED, SEAMLESS ONE-PIECE PLASTIC

Each OLSON-ITE Plastic Seat is molded in one-piece under 300,000 pounds pressure . . . much stronger than practical purposes require. Weakening joints, seams and crevices are eliminated to form an almost indestructible seat! For complete descriptive literature, write Dept. SCS-5831 today.

Swedish CRUCIBLE STEEL COMPANY

8561 BUTLER AVENUE . . . DETROIT, MICHIGAN





Spang

TUBULAR PRODUCTS

ARE DOING THEIR BIT TO HELP BRING VICTORY *Sooner!*

SPANG PRODUCTS

Spang Seamless Pipe

Spang CW Pipe **Spang Welded Pipe**

Central Rigid Steel Conduit

Over the Ambridge, Pa. plant of The National Supply Co., Spang Chalfant Division, where Spang Seamless Pipe is produced, flies the Army-Navy "E" Flag, as a daily incentive to the workers for still greater production achievement!

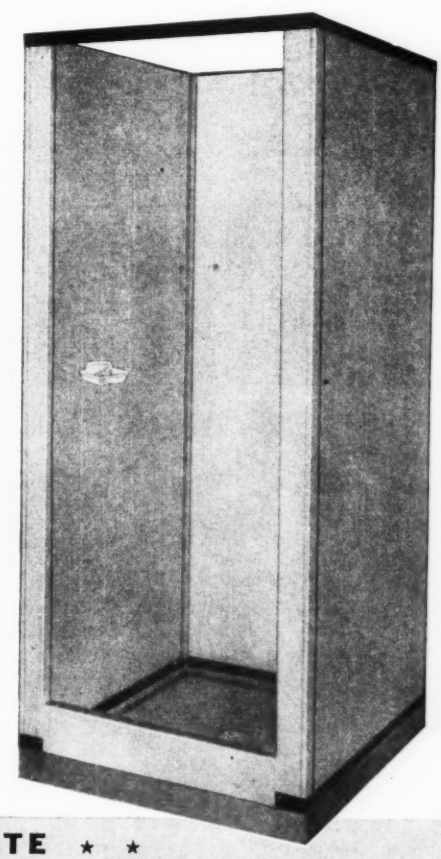
Contractors
who KNOW . . . *Choose*

Bathe-Rite SHOWER CABINETS

. . For Vital Savings in Time and Labor

The quickest way to attractive, sturdy, high quality Shower facilities today is—BATHE-RITE! This has been proved in the experience of Contractors everywhere — men who have installed THOUSANDS of Bathe-Rites in war housing projects, war plants, camps and personnel buildings.

BATHE-RITES are engineered for QUICK ASSEMBLY. With fewer parts to handle, designed for quick easy fitting, even unskilled labor can erect them in record time, at substantial savings in labor cost. You can easily install FOUR Bathe-Rites in the time usually needed to put up THREE ordinary cabinets . . . and have a finished installation that will meet highest wartime standards of quality, convenience, and appearance.



BATHE-RITES . . Especially adaptable to War Housing Remodelling

Two standard sizes fit all needs . . . Comply with FPHA Specifications. Require only 30" of floor space, no extra wall or floor alterations.

WRITE OR WIRE FOR DETAILS

Give name of project and quantity required.
Delivery assured on any quantity.

Bathe-Rite division
MILWAUKEE STAMPING COMPANY
804S South 72nd Street, Milwaukee, Wisconsin

★ ★ QUALITY-BUILT by BATHE-RITE ★ ★

Buy
U. S. WAR BONDS
ONE THING
THE HOME OF THE
FUTURE WILL BE
SURE TO HAVE..
THRUSH
FORCED CIRCULATING "SUMMER-WINTER"
System of Hot Water Heat!
IDEAS are on the march! Improvements in products due to the War's demands will mean much to the home of tomorrow. In heating, Hot Water is coming into its own! Already we can predict... most of the better homes of the future will be almost magically heated automatically with Forced Circulating Summer-Winter Hot Water Heat at amazingly low cost. While our facilities today must all be devoted to working for Victory, Thrush Circulators, Valves and Controls are still available under Government priorities. Write Department A-6 for more information now.
H. A. THRUSH & COMPANY · PERU, IND.

Have You a Problem involving Fumes that make war workers sick?

Read How PROPELLAIR Ventilating Specialists Solved a Tough Problem Involving Toxic Fumes!

PROPELLAIR VENTILATING EQUIPMENT OFFERS THESE EXCLUSIVE ADVANTAGES

AXIAL-FLOW, AIRFOIL PROPELLERS, especially designed by Propellair engineers, deliver maximum air with minimum horsepower. Air flow is even over all parts of the blades—the *whole* fan works, not just the tips! These unique propellers are also non-overloading—from free air to complete block-off, horsepower remains virtually constant as long as motor speed is constant. The number of blades, and their angle and shape, depend on the job to be done.

CURVED ENTRANCE RING,

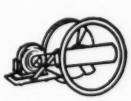
in addition to serving as a sturdy support assembly, reduces tip loss and enables Propellair Fans to deliver *maximum air per horsepower.* Introduced in 1930, as a result of exhaustive experiments and tests by Propellair engineers, this design makes possible the utilization of the "Airfoil" air-movement principle in the *entrance ring* as well as in the *propeller.*

A PROPELLAIR FAN FOR EVERY APPLICATION!

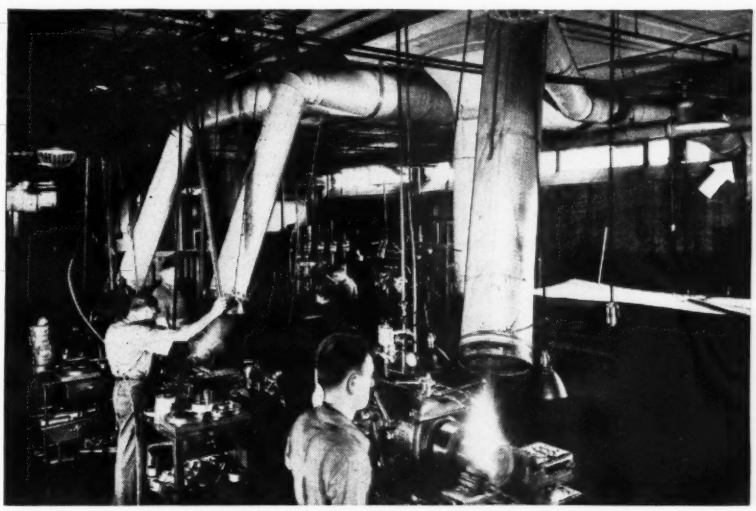
Pictured here are just three of *ten* different types of Propellair Fans. Each of the ten was developed for specific ventilating jobs—is guaranteed to perform them with utmost efficiency, dependability and economy.

CD—Direct connected to electric motors. For ducts, hoods, roof ventilators or panels.

CS—Heavy-duty complete belt-driven unit in duct section. For severe dust, corrosive or explosive vapors.



CU—Low-stand, tiltable, portable cradle fan. For hardening-room service, production-line drying or cooling, elimination of dead spots.



The ducts, one for each lathe, are clearly shown in this photo. Note how they converge at the fan, indicated by the arrow.

Doubled and redoubled war-production schedules forced a prominent manufacturer to install a battery of high-speed lathes in a poorly ventilated basement area. The light cutting oil used produced volatile toxic vapors, resulting in lung irritations, skin infections and serious worker absenteeism. How could these vapors be eliminated?

The problem was solved by Propellair ventilating specialists, who recommended and installed a ¾ h.p. Propellair Fan in a nearby window, with a separate duct extending to each lathe. Serving all of these ducts, the fan provides a volume of 3880 cubic feet per minute, producing air velocities of 2500-3300 feet per minute at each lathe that whisk all the volatile vapors off the work and out the window.

In thousands of war plants everywhere, Propellair ventilating specialists have solved tough air-moving problems of many other types, too. Dust-laden air is removed—heat is carried away or more evenly distributed—cool air is circulated—products are cooled for handling.

Whatever *your* war-production ventilating problem may be, it can be solved skillfully and economically by Propellair men and equipment. Mail the coupon below for complete information!

Mail This Coupon Today!

PROPELLAIR INC.
"Moving Air Is Our Business"
SPRINGFIELD • OHIO

PROPELLAIR, INC., Springfield, Ohio (6)

Please send me complete information on Propellair Ventilating Equipment.

Name..... *Position*.....

Firm Name.....

Street Address..... *City & State*.....

My ventilating problem involves:

☐ Heat ☐ Fumes ☐ Moisture ☐ Dust

Remember the name that puts money in your pocket

For years Fretz-Moon Pipe has been helping plumbing, heating and air-conditioning contractors make money by saving time.

Today it isn't a question of making money—it's getting the material and the man power to get jobs done. Fretz-Moon Pipe is helping, but war demands come first. So, regardless of any preference you may have, take any pipe your supply house can give you. If it's Fretz-Moon, and it's new to you, try it and see how its 14 points of superiority help finish work faster. And when the war is won and supplies are back to normal, remember the name Fretz-Moon and let this quality pipe make profits on your share of the back-log of work now piling up.

FRETZ-MOON TUBE COMPANY, INC., Butler, Pa.
Makers of black and galvanized steel pipe—in UNIFORM LENGTHS

WHEN YOU BUY PIPE REMEMBER THESE

14 Points

OF FRETZ-MOON SUPERIORITY

- Uniform in quality
- Uniform in size
- Uniform in wall thickness
- Uniform weld
- Uniformly soft and ductile
- Uniformly threaded
- Uniformly easy to cut
- Uniformly easy to thread
- Uniformly easy to bend and coil
- Uniformly easy to weld
- Uniformly easy to fit
- Uniformly clean and free from scale
- Uniformly galvanized with a smooth tight coating
- Uniform lengths

★ ★ ★

Made Also in Extra Long Lengths

HOW AND WHY

WILLIAMS' TOOLS AID WAR PRODUCTION

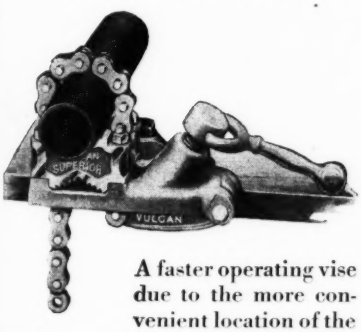
DATA ON "VULCAN" CHAIN PIPE VISES

● Williams' "Vulcan" Chain Pipe Vises are available in two basic types: "Vulcan Superior", with adjusting handle on top for greater convenience to the operator, and "Vulcan", of conventional design with handle below the base.

In addition, the Williams' line also includes the "Vulcan" Vise Stand —a complete unit combining Vise, Stand and Pipe Bender. A description of the construction and utility features of these Vises is given here to facilitate selection of the most efficient type for any specific service.

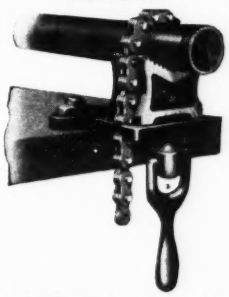
Williams' "VULCAN", *the original Chain Pipe Vise, is still the favorite among experienced pipe workers.*

"VULCAN SUPERIOR"



A faster operating vise due to the more convenient location of the handle on top of vise and above the bench. This vise also has reversible jaws, which double the service life of the tool. "Vulcan Superior" has one half inch larger capacity than other chain vises of corresponding size. Made entirely of tough wrought steel with drop-forged base, jaws, handle and chain arm. Available in two sizes, for pipe 1/8″ to 4-1/2″.

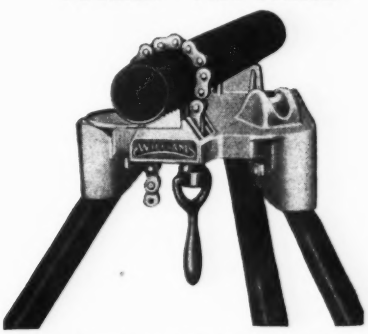
"VULCAN"



The original chain pipe vise and a favorite with pipe workers for more than thirty years. A light, compact, positive-gripping tool suitable for a wide variety of pipe work. Made entirely of wrought steel the same as "Vulcan Superior". Available in four sizes, for pipe 1/8″ to 8″.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS
Headquarters
for over half a century for
DROP-FORGINGS and DROP-FORGED TOOLS

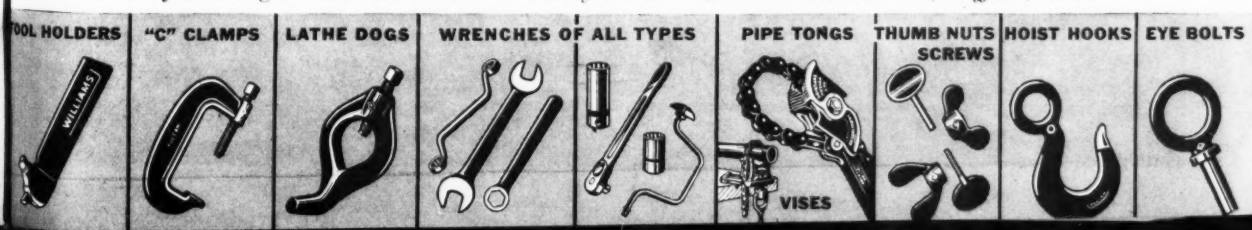
"VULCAN" VISE STAND



A 3-in-1 unit combining Vise, Stand and Pipe Bender. The high-grade malleable iron base, designed for severe service, is equipped with oil can recess, tool slots, and rear pipe support. The Pipe Bender handles pipe up to 3/4″. For easy carrying, legs fold and secure with tie chain. Vise parts are interchangeable with "Vulcan" No. 1. Made in one size only, for pipe 1/8″ to 2″.

Williams' HOW *and* WHY *Data Sheets cover 13 subjects to date. Write for your free copies, punched for 3-ring binders.*

Sold by Leading Industrial Distributors Everywhere . . . J. H. Williams & Co., Buffalo, N. Y.



DO NOT OVERLOOK YESTERDAY'S MANSIONS FOR TOMORROW'S IMPROVEMENTS

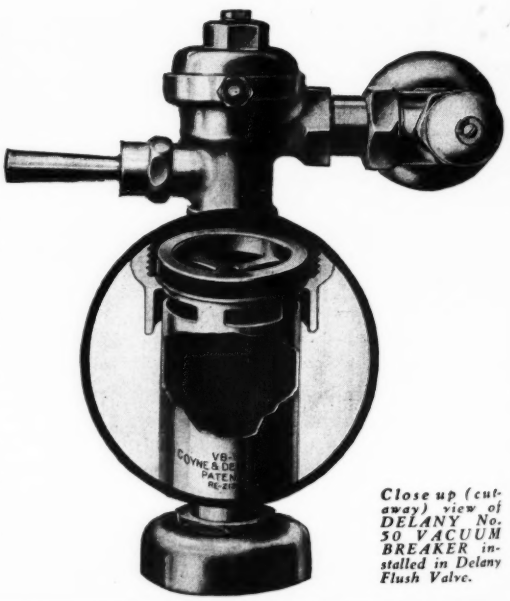
The present will become the past with the suddenness of a tropical sunset the moment peacetime building is again permitted.

Scientific planning will greatly alter the new building program and include a sweeping slum removal movement.

During this whirlagig of change don't overlook one simple truth—there are more buildings already built than may be built and therefore remodeling will play a large part in tomorrow's building.

"Coyne & Delany" is in a position to supply tomorrow's flush valves for tomorrow's homes, designed to give faultless operation and protection against dangers of back syphonage

—and because "Coyne & Delany" was established during the infancy of domestic sanitation, sixty-four years ago, this organization is qualified to serve the architect and plumber in the maintenance or modernization of today's and yesterday's homes as well as tomorrow's homes.



Close up (cutaway) view of DELANY No. 50 VACUUM BREAKER installed in Delany Flush Valve.

SINCE 1879

Coyne & Delany Co.

BROOKLYN N.Y.

BLUEPRINT POST-WAR BATHTUBS NOW!

★ Far-sighted plumbers today are advising architects, builders and owners to allow space and make provision for the bathtub to be installed later on when peace makes them again available.

Your experience proves that people want a bathtub and look upon a bathroom without one as incomplete. Women especially prefer the bathtub for their own use and for their children. A relaxing session in the bathtub is enjoyed even by the shower enthusiast. For invalids, disabled and older people who have to rest while they bathe, the bathtub is more than a convenience — it's a necessity.

Insist that space be saved for the bathtub so that after the war the bathroom can be completed without moving partitions and other extensive remodeling—to provide full, modern bathing comfort and convenience.

Write for folder, "What about the Bathtub?" Kohler Co. Established in 1873. Kohler, Wisconsin.

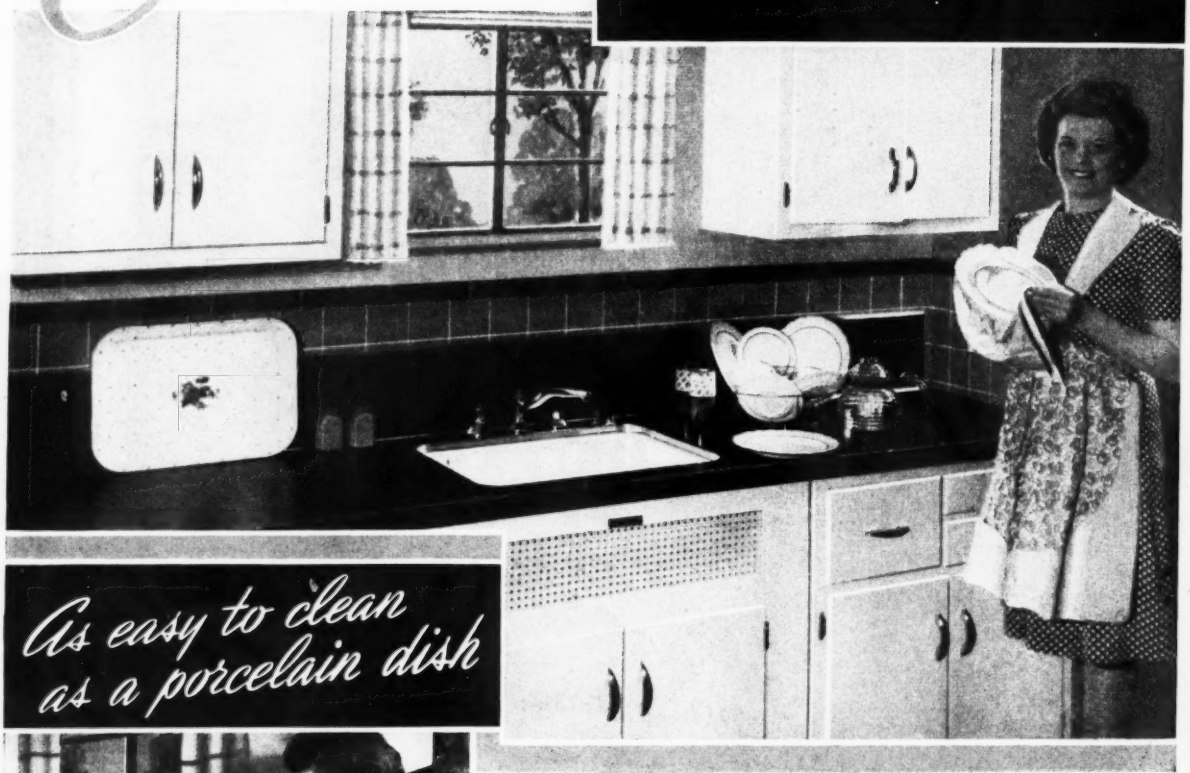
★ BUY UNITED STATES WAR BONDS ★

KOHLER OF KOHLER

PLUMBING FIXTURES AND FITTINGS • HEATING EQUIPMENT • ELECTRIC PLANTS

Camden

BRINGS YOU TOMORROW'S SINK ...TODAY



As easy to clean as a porcelain dish

Obtainable in single sink or sink-and-tray combination

Now, your customers can enjoy all the unique advantages of Hi-Fired Vitreous China in their kitchens. *Camden* offers to its dealers everywhere a rare opportunity to sell VITREOUS CHINA sinks and sink-and-tray combinations for essential war housing and conversion programs.

These new V/C products offer an entirely new conception of sparkling cleanliness and lifetime service. For *Camden's* Vitreous China is HI-FIRED . . . which means life-long beauty and lustre without discoloration, chipping or crazing.

Camden has prepared an attractive customer folder to help you merchandise these new V/C products.

Camden POTTERY, Camden, N.J.

Makers of fine V/C Plumbing Fixtures for over 50 years

6

A World of Uses for

MILLS PLASTIC Tubing and Fittings

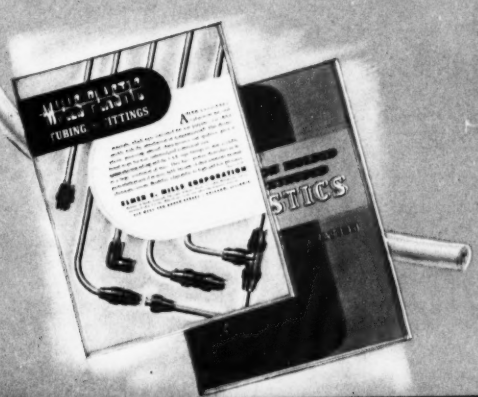
● From laundry equipment to oil lines, from refrigeration systems to panel boards for recording instruments, MILLS PLASTIC* tubing and fittings have become more and more popular for war, industry, domestic and commercial uses. The unusual characteristics and qualities of MILLS PLASTIC have made it of strategic importance today.

MILLS PLASTIC tubing is a proven practical product because of its adaptability under high bursting and working pressures, insulating qualities, resistance to most chemicals, flexibility and ease of handling. It has replaced vital materials needed in the war effort, such as aluminum, brass, copper, nickel and stainless steel.

MILLS PLASTIC tubing is available in outside diameters of 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", and 3/4" in a variety of wall thicknesses. Special sizes upon request.

*Made of Saran

For more information about MILLS PLASTIC tubing and fittings, write on your letterhead for the new six-page circular or for our larger catalog containing data and illustrations of Injection Molded and Extruded Plastics.

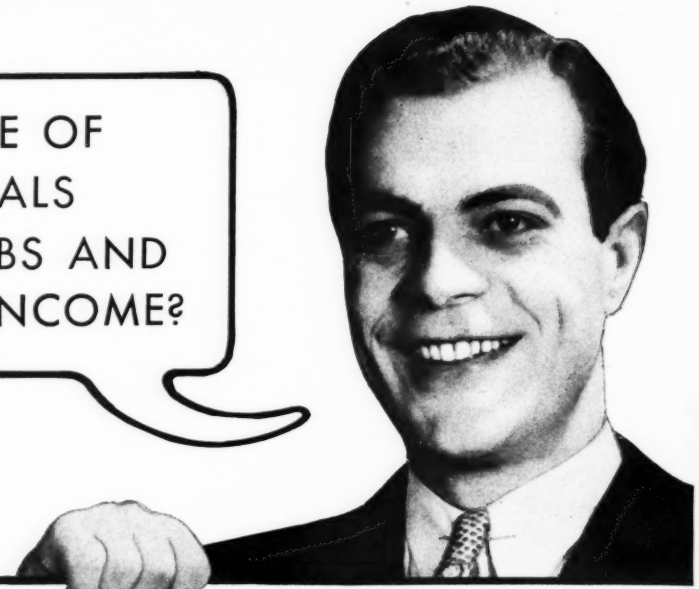


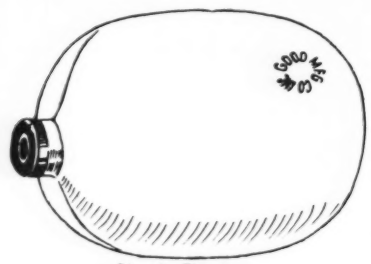
Elmer E. Mills Corporation

Molders of Tenite, Lumarith, Plastacele, Fibestos, Lucite, Crystallite, Polystyrene, Styron, Lustron, Loalin, Vinylite, Mills-Plastic, Saran and Other Thermoplastic Materials

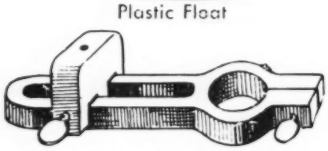
812 WEST VAN BUREN STREET • CHICAGO, ILLINOIS

IS THE SHORTAGE OF CRITICAL MATERIALS HOLDING UP JOBS AND CUTTING YOUR INCOME?

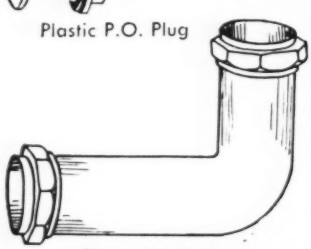




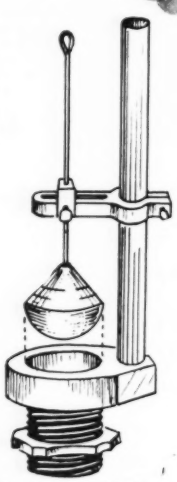
Plastic Float

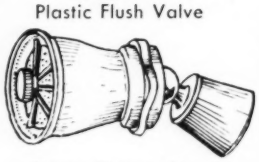

Plastic Adjustable Guide Arm

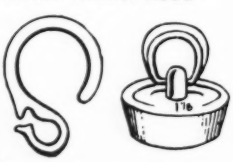
Plastic P.O. Plug


Plastic Flush Elbow

Plastic Overflow Tube


Plastic Flush Valve


Plastic Shower Head


Plastic Shower Curtain Hook

Plastic Stopper

There is no need of losing business and profits because of the shortage of plumbing repair parts made of critical materials. You can now get most of them quickly, from our stock of over 2,500 plumbing repair parts.

To provide our trade promptly with parts which no longer can be made of materials needed for the war, "Good" now makes them of PLASTIC. These plastic plumbing materials not only possess all the features which have made "Good" Products famous for 47 years, but have the added advantage of not being affected by corrosion.

If you wish to eliminate come-backs and help your men finish jobs faster, write for our big catalog.

Good Manufacturing Co., Inc.

For 47 years, a complete line of plumbing repair materials.

200-208 Lincoln Avenue, New York, N.Y.

"Good" Plumbing Repair Materials

MR. PLUMBING CONTRACTOR— ARE YOU GETTING YOUR SHARE OF THIS PROFITABLE PIPE BUSINESS?

NEW FIBRE PIPE FOR DRAINAGE AND OTHER NON-PRESSURE USES

CHECK THESE FEATURES!

- **REPELS ROOT GROWTH**—tight joints and chemical composition make Orangeburg Pipe resistant to root growth.
- **NON-METALLIC**—saves critical materials; does not tuberculate.
- **NON-CORRODIBLE**—resistant to alkalies, salts, and dilute acid solutions.
- **TIGHT JOINTS**—in laying tight lines, permanently watertight joints are easily and quickly made with tapered sleeve coupling.
- **EASY TO INSTALL**—light weight and longer lengths mean easy installation. Can be sawed, bored, and worked with ordinary tools.

REPLACES CAST IRON AND TILE!

● Why lose business because of today's wartime scarcity of metal pipe when this durable, non-metallic pipe is available for quick delivery?

It's not a substitute but an improvement over cast iron and tile pipe for many domestic and industrial drainage and other non-pressure uses including . . . Connections from House-to-Sewer or Septic Tank, Downspouts and Storm Drains, Drainage of Farmland, Sleeves and Weepholes.

Also comes in special perforated type for Septic Tank Filter Beds, Sub-Soil Drainage, Irrigation, and Foundation Footing Drains. Perforations provide complete drainage; snap-couplings keep pipe in line, speed installation, protect joints against clogging.

Backed by consumer advertising to your customers in leading home and farm magazines. Write for further information, price list, and profit possibilities now!

Mail Coupon Today

THE FIBRE CONDUIT COMPANY
Orangeburg, N. Y. (DE-6)
Please send descriptive literature on Orangeburg Fibre Pipe.

Name.....

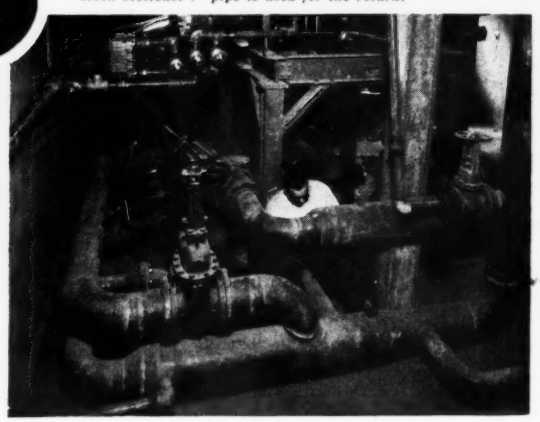
Company.....

Address..... City.....

ORANGEBURG

WITH 50 YEARS EXPERIENCE IN THE MANUFACTURE OF NON-METALLIC CONDUIT AND PIPE, SERVES THE POWER AND LIGHT, TELEPHONE, GENERAL CONSTRUCTION, CHEMICAL, PETROLEUM, PLUMBING AND BUILDING SUPPLY FIELDS WITH ELECTRICAL FIBRE CONDUIT . . . ELECTRICAL UNDERFLOOR DUCT SYSTEMS . . . AND FIBRE PIPE FOR NON-PRESSURE USES.

Steam heat for the entire Terrace Village is supplied through 10" seamless mains while 6" laterals serve steam to various block sections. 4" pipe is used for the return.



—*Major tonnage of pipe is*

NATIONAL!

TERRACE Village, Pittsburgh, is one of the nation's largest housing developments. It contains 2649 family units, 3 recreation and management units and 1 administration building—a total of 2653 units. All buildings are efficiently heated from one central boiler plant.

The development has been completed for more than a year, and heating throughout the entire community has been entirely satisfactory.

This shows that sound design, backed up by proved materials and good installation practice, brings sure results. The major tonnage of pipe for the heating was the same NATIONAL Pipe that has been giving good service for more than 50 years in all types of buildings. It has been improved, of course, from time to time with new methods and processes of manufacture.

Can you get such pipe today? Yes, if you are engaged on a war job which is helping to bring Victory. It's true that much of the pipe we make is going into such projects as the world's biggest oil line from Texas to New York . . . or huge quantities of new ships, trucks, tanks and jeeps, bombs and shells . . . but war housing developments, industrial plants, hospitals and military buildings are getting their share, too.

And in the future, as in the past, NATIONAL Pipe promises the greatest value per dollar of cost for any type of building project.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* — United States Steel Export Company, New York

UNITED STATES STEEL

RIDGID *Tri-Stand Vise is really a portable workbench*

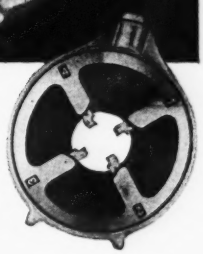
9 Handy Vise Models in 23 sizes

THIS Tri-Stand, for instance, is typical of RIDGID Vises in work-and-time-saving features. It's equipped with a 3-size pipe bender, pipe support, tool slots and plenty of room for oil can and dope pot. LonGrip jaws protect polished pipe. Legs fold in for easy carrying to the job—you can screw feet to floor but it "stays put" without that. Ceiling brace screw is standard equipment. Made also with chain vise. Strong malleable construction. Order this handy vise from your Supply House.

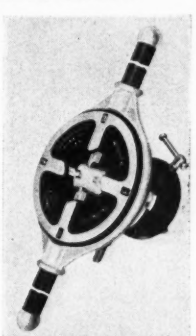
It pays you to have this New RIDGID Catalog

It illustrates and describes all 9 models — also RIDGID Pipe Wrenches, Cutters, Threaders, Reamers & Screw & Pipe Extractors — all with typical RIDGID advantages... that give you easier better work & longer tool life for your money. Send for a copy *now!*

Set it to size in *10 Seconds*



Only 1 set of high speed steel dies for 4 sizes of pipe — and they stay in the threader.



No. 65R is furnished also in 2-handle model; also as a plain die stock, No. 65.

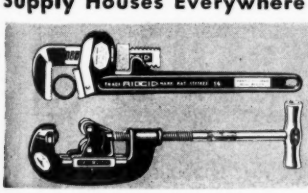
To thread any 1" to 2" pipe with the No. 65R RIDGID

● No time lost changing chaser dies—1 set of chasers in this remarkable No. 65R assures you micrometer perfect threads on 1", 1¼", 1½" and 2" pipe by a simple 10 second change; no extra sets of dies to bother with. Mistake-proof workholder sets instantly to pipe size, no bushings needed. You'll like the easy floating action, because power is straight line from handle to chasers. A rugged steel-and-malleable tool, trouble-free, durable. As always, it pays you to ask your Supply House for the RIDGID No. 65R.

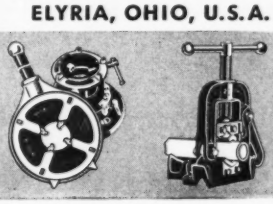
Buy RIDGID Pipe Tools at Supply Houses Everywhere

RIDGID
★ PIPE TOOLS ★

THE RIDGE TOOL COMPANY
ELYRIA, OHIO, U.S.A.

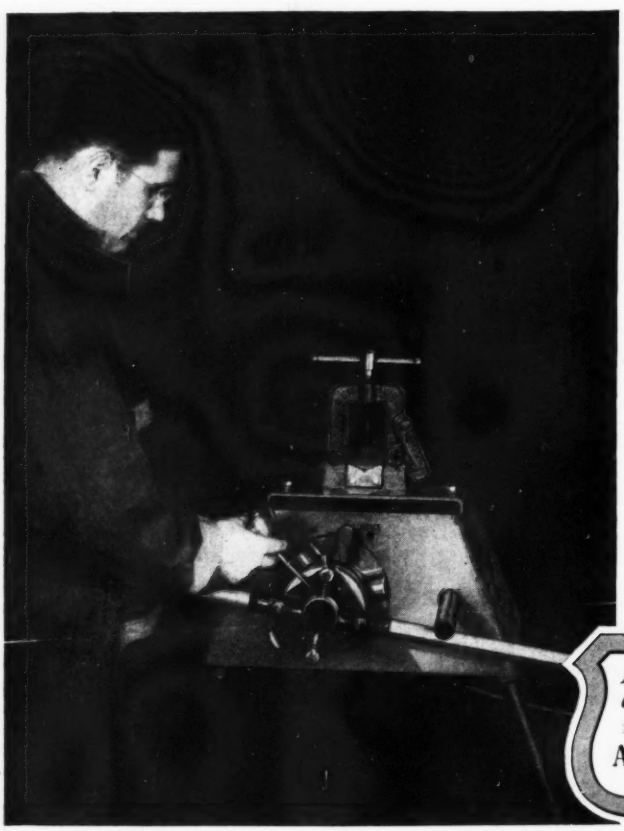


Fast-Working Tools for War... and the Busy Peace that's Coming



Think what he could do with an OSTER 422!

OSTER No. 422 POWER VISE STAND versus HAND THREADING HAND METHOD (Time in minutes and seconds)						
PIPE SIZE	½"	¾"	1"	1¼"	1½"	2"
Cutting-off time .	33	39	1-00	1-06	1-12	1-36
Reaming time . .	12	24	27	30	39	45
Threading time .	1-30	1-48	3-00	3-39	4-00	5-00
TOTAL TIME	2-15	2-51	4-27	5-15	5-51	7-21
OSTER No. 422 POWER VISE STAND (Time in minutes and seconds)						
PIPE SIZE	½"	¾"	1"	1¼"	1½"	2"
Cutting-off time .	12	15	18	21	24	27
Reaming time . .	7	10	11	12	13	14
Threading time .	55	1-00	1-07	1-09	1-11	1-13
TOTAL TIME	1-14	1-25	1-36	1-42	1-48	1-54
TIME SAVED WITH OSTER No. 422						
PIPE SIZE	½"	¾"	1"	1¼"	1½"	2"
TIME SAVED	1-01	1-26	2-51	3-30	4-03	5-27



The difference between hand threading and power threading is often the difference between profit and loss on a job. Hand tools are essential for many requirements. But hand *use* of hand tools is non-essential and wasteful on most jobs.

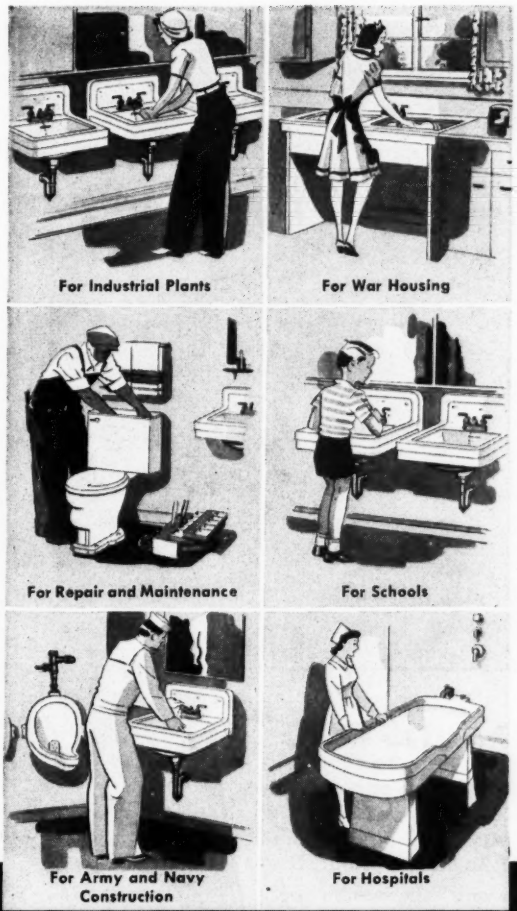
With the Oster No. 422 Power Vise Stand, a mechanic can use his own die-stocks, cutters, and reamers and mount his own vise. He can make legs for the stand from standard 1" pipe. All other equipment is included with the Oster No. 422: (Universal, reversible, variable speed motor; Universal, gripping chuck on front of spindle; universal, centering chuck at rear; two carrying arms; feet for front legs; and universal vise mount plate.)

Low cost of the Oster No. 422 is soon wiped out by actual time savings. Ask your Oster distributor for complete details, or write to us.

THE OSTER MANUFACTURING CO.
2045 E. 61st St. • Cleveland, Ohio, U. S. A.

No Time Out to Celebrate Our 50th ANNIVERSARY 1893-1943

OSTER

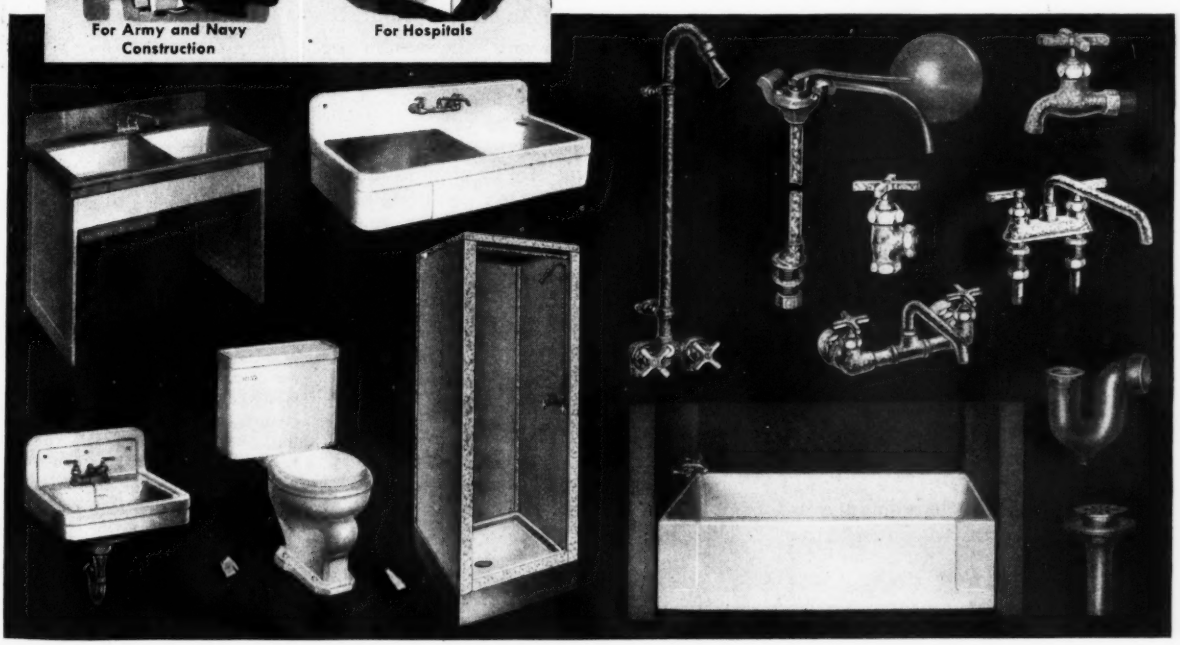


HELPING YOU SUPPLY TODAY'S MARKETS

TODAY'S markets for plumbing contractors consist of essential repair and maintenance and installing new equipment in war construction. To meet the needs of these two fields, Crane has developed the Enterprise line of fixtures and trimmings which cover the needs of homes, industrial plants, schools, hospitals, Military Installations, etc.

The Enterprise line is made almost entirely of non-critical materials and is proving sturdy and efficient under actual working conditions. This equipment has been approved by the Government and is today being used in large quantities in Government projects.

Your Crane branch will be glad to assist you in every way possible in complying with Government regulations in handling orders in your community that come under Government rulings.



CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

"Ask the man who runs one"

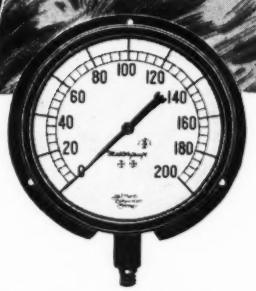
★ The time-honored Packard slogan can be applied with real force and significance to the machinery of war. Whether it's a jeep, a tank, a plane, or a battleship, just "ask the man who runs one". From all reports his verdict will be: "It's O.K., Uncle Sam; It's got what it takes!"

In wartime such a testimonial is not for one manufacturer, but for all who had a hand in the achievement. The products of peace wear the bright name plate of a particular manufacturer; in war, the individual must be forgotten. The tank or plane is not a Buick or Chrysler or Ford. It is just a "U.S.A." —a product of a large portion of U.S. industry. The individual's pride of achievement must give place to something greater — the collective pride in masterpieces achieved by all industry working together in an All-American team.

Along with thousands of other manufacturers, James P. Marsh Corporation is on that team. True, the gauges, dial thermometers and other instruments we are furnishing are not shot at enemy positions or dropped on Tojo's palace. But they *are* an essential part of almost anything you can mention for directly or indirectly attaining such objectives.

They have simply a little job in a big war; but you who know Marsh Instruments and heating specialties will agree that there is no equipment more capable of handling the jobs for which it has been chosen.

JAS. P. MARSH CORP., 2051 Southport Avenue, Chicago, Ill.



The Gauge with the "RECALIBRATOR"

A gauge built to Marsh Standards is not likely to be knocked out of adjustment. But if it is, the Marsh "Recalibrator" will quickly restore its accuracy. Simply turn the "Recalibrator" screw until the pointer is at zero when not under pressure. The gauge will then be right at all points on the dial. Unlike other methods of resetting, the "Recalibrator" gets at the root of the error—re-establishes the relation of the bourdon tube to the movement—actually *re-calibrates* the gauge.

MARSH GAUGES

DIAL THERMOMETERS ★ RECORDERS ★ HEATING SPECIALTIES

MERCOID VISAFLAME CONTROL SYSTEM

Listed as Standard by Underwriters' Lab., Inc.

IT USES THE LIGHT OF THE FLAME AS A MEANS OF ACTUATING THE CONTROL SYSTEM

FOR DOMESTIC AND INDUSTRIAL OIL BURNERS

The Visaflame Control System for direct burner mounting is a step ahead in oil burner controls. It fits in with modern heating equipment design, where a more compact unit and positive control efficiency is desired.

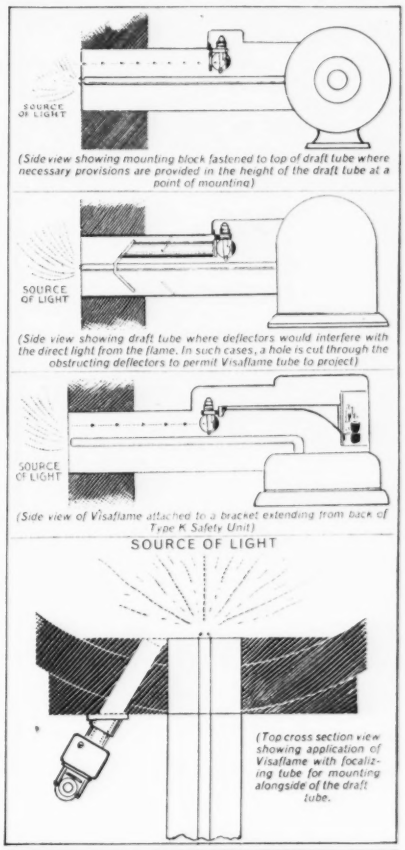
Now is the time to lay plans for postwar production. Our engineering staff will cooperate with you in the adaptation of the Visaflame System. Take advantage of this opportunity. You are not taking any chances with something untried in the field of practical experience. All such provisions have been amply made, covering a period of more than five years, involving many installations under various field conditions.

Its background gives you every assurance of making a wise choice in the selection of the Visaflame Control System.

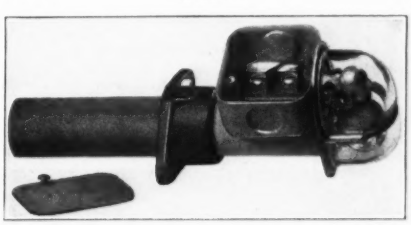
Here are some of the advantages:

1. Low cost integral burner and control assembly.
2. Greatly simplified field installation.
3. Complete accessibility after installation.
4. Efficient operation regardless of fluctuating stack temperatures.
5. Solution of problem of low or slow changing stack temperatures, characteristic of many current-day high efficiency furnace and boiler designs.
6. Adaptability to high low flame operation.
7. Protection against ignition power and flame failure as well as the hazard of low line voltage.
8. Mercoid Mercury Contacts throughout the circuit.

Further information sent upon request


SOURCE OF LIGHT
(Side view showing mounting block fastened to top of draft tube where necessary provisions are provided in the height of the draft tube at a point of mounting)
SOURCE OF LIGHT
(Side view showing draft tube where deflectors would interfere with the direct light from the flame. In such cases, a hole is cut through the obstructing deflectors to permit Visaflame tube to project)
SOURCE OF LIGHT
(Side view of Visaflame attached to a bracket extending from back of Type K Safety Unit)
SOURCE OF LIGHT
(Top cross section view showing application of Visaflame with focalizing tube for mounting alongside of the draft tube.
(Top cross section view showing mounting case used on side of draft tube provided with proper opening.

The adaptation of the Visaflame is flexible in its application. The above illustrations show a few applications meeting various construction requirements.



Type L-41 Visaflame assembly complete with tube, glass cover and terminal outlet box.

THE MERCOID CORPORATION, 4231 BELMONT AVENUE, CHICAGO, ILLINOIS

85% of the Plumbing Trade is Pulling Through and learning how to make more money after the war!

A May 1943 national survey by a leading trade journal (*) shows that 85% of the Plumbers have already renewed their licenses or registrations!

That's mighty important news for Plumbers—Wholesalers—Manufacturers—present and prospective Home Owners! It shows that the Plumbing Industry is tougher than its wartime problems...that Peace will find it intact and set to serve the new America.

There's a lesson for the Trade for the future in its winning fight. *The weapons that won it mean better post-war business and profits:*

- Close and continuous cultivation of local Modernization—Repair—Maintenance work.
- Constant contact with the Wholesaler for New Building "leads" and help in selecting the quality products with which to handle them.
- Alert merchandising that searches out new business, and maintains the Plumber's importance in the life of the community.

Scovill has always promoted these policies and helped the Trade apply them—just as from 1940 to the present time it has sought to make its supply of plumbing products serve the maximum number of Plumbers (distributed, as always, through recognized wholesalers only).

Scovill is in the Plumbing business to stay. Its "Square Deal" policy for the Trade remains unchanged. *If the Trade will fight for business in Peace as it has in War, there's a grand day coming for us all!*

**PLUMBING AND HEATING JOURNAL—sent to all cities over 10,000 pop.*

SCOVILL

SCOVILL MANUFACTURING COMPANY
WATERVILLE DIVISION
GENERAL SALES
WATERVILLE, CONN.

SCOVILL Masters of Metal

YOU SAID IT, FITZGIBBONS!

THE Fitzgibbons advertisement reproduced here contains words of wisdom. In times like these a good boiler certainly does deserve more careful watching than ever before.

The question is whether "brother" can properly "watch it". Boiler tenders are scarce today, and they have to cover so much ground that the time available for watching things is still scarcer!

As a matter of fact, when you read the excellent suggestions made in this Fitzgibbons advertisement, you find the warning to "keep the boiler water level right" is about the toughest of all on the fellow who also has to "keep the tubes clean; keep the ashpit free of hot ashes" and so on. Under such conditions everyone will agree that it's a mighty good idea to put as many things as possible under automatic control.

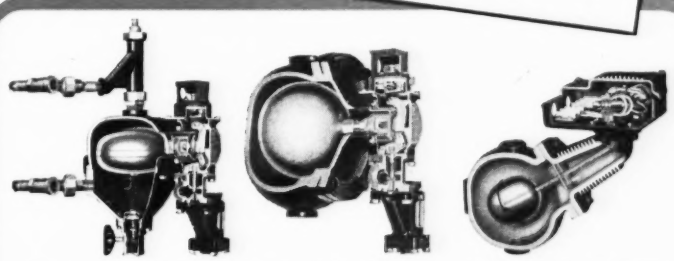
The pressure is probably under automatic control in this plant, but apparently the water level is not. Some McDonnell Feeder-Cut-off Combinations would keep that water line safe—provide dependable protection of the investment in these and hundreds of other now almost priceless boilers!

The importance of protecting essential boilers from the ever-present threat of low-water damage is fully recognized, and therefore McDonnell Boiler Water Level Controls are still available where operating conditions make their use essential.

A manual is available covering many types of installations that typify the applications currently required and specified. It contains drawings, showing piping and wiring to meet practically every boiler water level control problem.

WRITE FOR YOUR COPY

Watch it brother!
—THAT FITZGIBBONS STEEL BOILER
is irreplaceable right now, unless your priority makes a pretty high bid. So keep tubes and combustion surfaces clean — keep the water level right — keep the steam pressure where it should be, no higher — and (if it's a coal-fired boiler) keep the ashpit free of hot ashes. There are a lot of other "do's and don'ts" involved because as you know, boiler operation is not merely an "A-B-C" matter — although with your Fitzgibbons Steel Boiler it may approach that ideal. So, as a constant reminder, we have worked out a chart to hang on the boiler room wall, giving operators the inside facts about boiler maintenance. If you haven't already done so, write for a copy now.
And use our Service Department to the full. It is organized to help you keep your Fitzgibbons Steel Boiler at its best, with replacement parts, advice, or any other form of cooperation required.
BUY U. S. WAR BONDS and STAMPS
FITZGIBBONS
INSTRUCTIONS
Write for this informative wall chart. It takes the guesswork out of boiler maintenance.
Fitzgibbons Boiler Company, Inc.
101 PARK AVENUE, NEW YORK, N. Y. WORKS, OSWEGO, N. Y.
Branches and Representatives in Principal Cities
FITZGIBBONS
The Steel Boiler that will see you through-and then some



McDonnell No. 47-2 Quick-Hook-Up Boiler Water Feeder with switch; for heating boilers below 5000 sq. ft. capacity; maximum steam pressure, 25 lbs. Switch may be wired to alarm signalling low water in case of emergency such as failure of water supply.

McDonnell No. 51-2 performs same functions as No. 47-2 for boilers ABOVE 5000 sq. ft. capacity; maximum steam pressure, 35 lbs. For pressures from 35 lbs. to 75 lbs. specify McDonnell No. 53-2.

McDonnell No. 150 Pump Control for boilers of any size; maximum steam pressure, 150 lbs. Used as feed-pump control, low water cut-off and alarm switch. Made with or without manual reset.

McDONNELL & MILLER, 1306 Wrigley Building, Chicago, Illinois

Doing One Thing Well

REG. U. S. PAT. OFF.

© M & M

McDONNELL *Boiler Water Level* CONTROLS

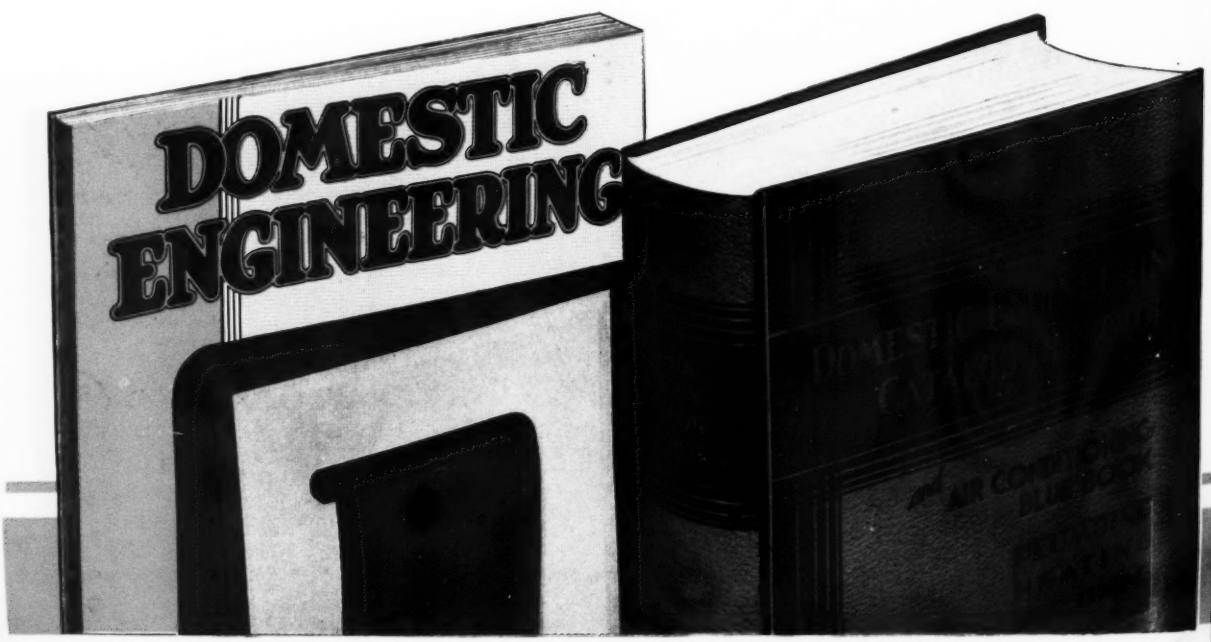
Here's a New Basis for Your

POST-WAR PLANNING *In the* PLUMBING and HEATING INDUSTRY...

JUST as surely as 2 plus 2 equals 4, the factors listed on the following page add up to a vast opportunity for the plumbing, heating and air conditioning industry . . . an opportunity to make its greatest contribution to the war effort. In other words, *Huge Production of Raw Materials* . . . Plus . . . *Completion of Certain War Contracts* . . . Plus . . . *Growing Need for Civilian Products* . . . Equal *Vast Plumbing and Heating Opportunities!*

The services of the plumbing, heating and air conditioning industry have been of immeasurable value in winning the battle of production. The services of our industry are and will be of equal, if not greater importance in the great task of winning the peace.

DOMESTIC ENGINEERING Magazine and DOMESTIC ENGINEERING CATALOG DIRECTORY, with 53 years of publishing experience as a background, stand ready to aid manufacturers interested in the plumbing, heating and air conditioning industry. Let us help you with your basic planning. Our advertising pages are available for translating your basic planning into effective action.



Huge Production of Raw Materials...Plus...

Completion of Certain War Contracts...Plus...

Growing Need for Civilian Products...Equal

Vast Plumbing and Heating Opportunities

IT is of immediate importance to every manufacturer interested in the plumbing, heating and air conditioning industry that he appraise not only his present position, but his post-war plans. One of the main reasons is that the fast-moving war picture has now reached the point where "War as Usual" is out. Why? Because of three factors: (1) the growing emphasis on post-war planning as reflected by Congressional activities and the general understanding that winning the war is not enough, (2) approaching "saturation" points on certain implements of war, and (3) the rising importance of the home front.

The rising importance of the home front is now recognized by Washington. Direct war production itself, as well as maintenance of public health and morale, depend upon repair, replacement and, to a definite degree, extension of essential civilian facilities. These factors already are apparent in headlines of the last few days which further emphasize the 300 or more civilian lines on which production must be increased or resumed.

So that you may be ahead of the parade and so that you may cooperate to the utmost in the national war effort, you are urged to inventory your facilities and matching opportunities now. As a starter, consider the services and facilities available to you through DOMESTIC ENGINEERING Magazine and DOMESTIC ENGINEERING CATALOG DIRECTORY. Full information upon request.

DOMESTIC ENGINEERING PUBLICATIONS, 1900 PRAIRIE AVE., CHICAGO

First Award for Editorial Achievement in Aiding the War Effort

THE CRYSTAL
B-4595

Fast mover

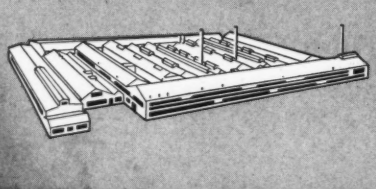
You'll find a lively market for the Crystal Drinking Fountain in both new industrial construction and plant and office modernization.

This popular vitreous china fixture has a sanitary bubbler, **automatic regulator,** strainer and iron trap, and uses the minimum of critical materials. It is attractive, durable, economical and easy to keep clean. Width, 11"; projection, 11½".

The Crystal and other fast-moving Eljer vitreous china fixtures are designed to help you meet present-day needs. Order them from your jobber.

ELJER CO.

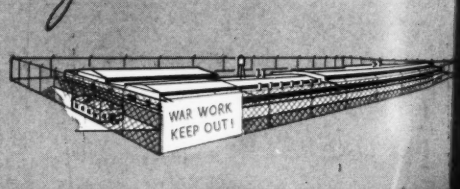
FORD CITY, PA.



Normally

PLUMBING FIXTURES ARE OUR EXCLUSIVE BUSINESS

. . . 15 acres of it!



Thanks:

Domestic Engineering supplies me with the best possible information on Washington happenings. Keep up the good work.

K. B. M.,
Mississippi

Between Ourselves

Highlights . . . . and Slants . . . . on Our Industry's Month

Flag and the War

This year, as last, Domestic Engineering is cooperating in the Treasury Department's war bond drive. Secretary Morgenthau has asked leading publications to display the American flag, and a war bond message, on the front cover of that issue which is in the hands of subscribers on July 4.

Since long before the actual declaration of war, Domestic Engineering has been devoted more than 100 per cent to the war effort, and we are happy to contribute further in this additional way.—Ed.

• • •

C. I. Soil Pipe Use

Plumbing and Heating Division Director Wilber recently pointed out that substitution of other materials for cast iron soil pipe within buildings is unnecessary in view of present stock of cast iron soil pipe.

Cast iron soil pipe manufacturers generally are reporting satisfactory inventories of this material.

• • •

Check Checks

The United States Secret Service has asked every business establishment to be careful in cashing Government checks. It is stated that the petty mail box thief is active, due to the increased number of Government checks being issued at this time.

The following are suggestions made for the benefit of the business man:

1. Before cashing a Government check, ask yourself this question: If this check is returned, can I find the person who gave it to me?

2. Do not cash checks for strangers. KNOW YOUR ENDORSERS. Demand proper identification. A check can be good, but if the rightful payee does not endorse the check, the second endorser will be the loser.

3. Insist that all checks be endorsed in your presence, and the address of the payee written below the endorsement.

4. Demand proper identification, as the wrong person may present a check for payment. Possibly the two very best means of identification are requesting that a man show both his draft registration and classification cards, and requesting that a woman show her ration cards. If these methods are accepted, attention should be given to the possibility of the name having been erased and another substituted. The endorsement on the check should be compared with the signature on the identification used. That is why we suggest that all checks be endorsed in your presence.

5. Beware of all persons presenting checks with addresses far removed from your place of business.

6. Make notations on the back of the check of the type of identification used and have each employee initial all checks accepted for payment.

• • •

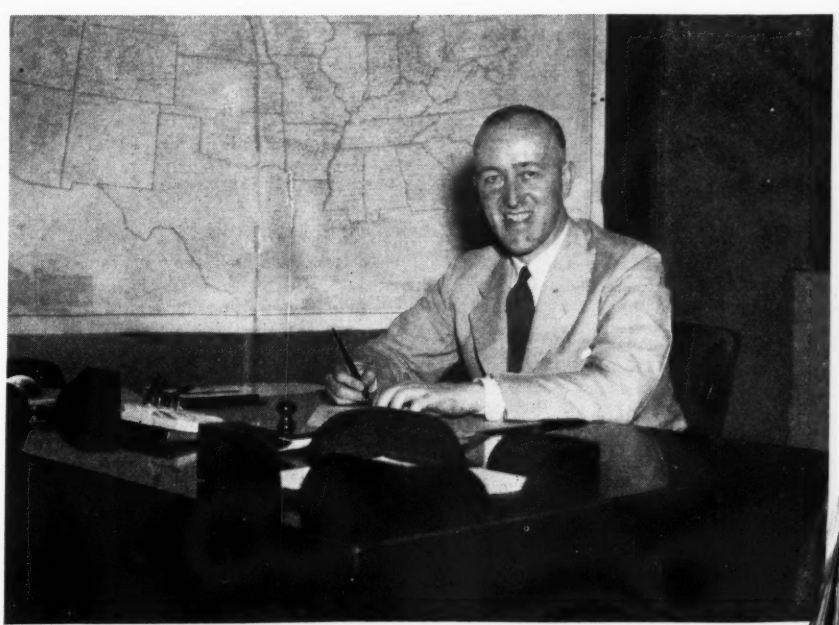
WPB Reorganization

John J. Hall (See Pages 48-49) is now Deputy Vice Chairman for Industry Operations under the recently announced reorganization of the Office of Program Vice Chairman of the WPB. Most of the industry divisions will report to Mr. Hall through five Bureau directors: H. D. Hughes, Commodities Bureau; James Auten, Construction and Utilities Bureau, of which the Plumbing and Heating Division is a part; Lewis S. Greenleaf, Consumers' Goods Bureau; Harry A. Rapelye, Equipment Bureau; and Howard I. Young, Minerals Bureau.

• • •

Grate Areas

Washington, D. C., May 28.—To clear up possible doubts as to the meaning of



William C. Macdonald, new deputy director of the Plumbing and Heating Division. Mr. Macdonald is well known to our industry through his work in the housing agencies and his pre-war connection with our industry in New England and throughout the East. He has addressed many conventions of State master plumbers associations. Mr. Macdonald takes the post vacated by Ronald Allwork, who resigned several months ago **(See Page 63)**

Between Ourselves . . .

"grate area" in the definition of Class A coal stokers, the War Production Board today issued General Limitation Order L-75, as amended.

Paragraph (a) (2) of the interpretation of the original Order L-75 defined "grate area" as being only the live grate; side dump plates were declared not a part of the grate area.

It is now specifically provided that side dump plates designed to burn coal are to be considered a part of the "grate area."

● ● ●

NAMP Program

Following are highlights of the program, 61st Annual Convention of the National Assn. of Master Plumbers, to be held June 7, 8, 9 and 10 at the Hotel Morrison, Chicago.

Monday, June 7, 1943

1:00 P.M.

Opening Session—Mural Room

Address of Welcome—Robert E. Murphy, Pres. Plbg. Contractors' Assn. of Chicago.

Introduction of N. A. M. P. President, T. W. Merryman, Chicago, Ill.—Merle J. Andrews, Springfield, Ill., Pres. Illinois Master Plumbers Assn.

Introduction of the Mayor of Chicago —John J. Calnan, Chicago, Past Pres. N. A. M. P.

Introduction of Women's Auxiliary President, Mrs. W. E. Miller, Washington, D. C.—T. W. Merryman, President N. A. M. P.

Introduction of Women's Auxiliary Officers—Mrs. W. E. Miller, President W. A. N. A. M. P.

7:00 P.M.

Dinner for State Presidents and Secretaries. Hollywood Room, Mezzanine Floor.

9:00 P.M.

Reception and Dance. Mural Room.

Tuesday, June 8, 1943

Reports of various committees and officers—president, secretary, treasurer, finance and credentials.

7:00 P.M.

Dinner for Past Presidents. Zephyr Room—Mezzanine Floor.

8:30 P.M.

Entertainment—"Chicago Night." Mural Room.

Wednesday, June 9, 1943

11:00 A.M.

Address—Roane Waring, Indianapolis, Indiana, National Commander, American Legion.

Recess.

1:30 P.M.

Fifth Session—Mural Room

Report of Board of Directors—R. K. Landreth, Longview, Tex. Vice-President, N. A. M. P.

8:30 P.M

Entertainment — Floor Show. Terrace Casino.

Thursday, June 10, 1943

9:30 P.M.

President's Ball—Mural Room.

L-42 Amended

Manufacture of plumbing fixture fittings and trim is affected by amended Schedule V to Order L-42, which was amended May 6. This amended schedule does not affect the sale of stock already on hand; it governs the manufacture only.

● ● ●

Tin Supply

Washington, D. C., May 25.—As a result of experience gained in administration of Conservation Order M-43, WPB today amended the order to effect technical changes aimed at correcting certain inequities in the conservation of the nation's supply of tin. In some cases it has been found that necessary uses had been eliminated, and in others that the tin content of material had been too greatly reduced.

Numerous changes have been made in the permitted tin contents in brass and bronze as provided for in Schedule 1, Section 5. It has been determined that for the specific purposes outlined, the permitted tin contents are required. It is believed that for almost all other purposes the general restrictions will be suitable.

The use of 38 per cent tin solder for wiping lead pipe joints in making connections with outside mains has been permitted because of the pressure at these connections.

● ● ●

Wholesalers & PD-1X

The advantages of PD-1X as a wholesaler's instrument for obtaining materials was emphasized to DOMESTIC ENGINEERING recently by Nathan G. Symonds and George Hench, officials of the Wholesale and Retail Trade Division, WPB.

Mr. Symonds is director of the division, and Mr. Hench is assistant chief of the Plumbing and Heating Section.

The two officials pointed out that PD-1X is the only method open to wholesalers by which they may up-rate the comparatively low A-10 received from plumbing and heating contractors to ratings sufficiently high to obtain materials. The ratings granted wholesalers on PD-1X range from AA-5 upward—with the thought that ratings granted must be sufficiently high to obtain the material. Mr. Symonds pointed out that other industries eligible to use PD-1X have found excellent success with it. Several factors combined to delay the plumbing and heating industry's acceptance of the form.

First of these probably was the fact that, when PD-1X was first introduced, manufacturers still had stocks of finished equipment which could be obtained with an A-10. This being the case, wholesalers generally adopted the easy course of extending the ratings obtained from P-84 and P-100 orders.

The second factor was the point that PD-1X required inventory figures which many wholesalers did not have available.

In passing, it might be remarked that WPB has not been unreasonable in accepting the reasonably exact approximations for inventory figures, when exact figures were lacking and the wholesaler explained the circumstance in an accompanying letter. Both Mr. Symonds and Mr. Hench feel that wholesalers will keep the necessary records once they understand the advantages accruing to them through the use of the PD-1X application.

In this connection, it is revealed that a new and simplified PD-1X is in the making and that it is hoped that the new form can be released at an early date.

The inventory provision will be retained, but the turnover required will not be so rapid.

(Continued on Page 90)

● ● ●

Coal Situation

Washington, D. C., May 13.—Joseph B. Eastman, director of the Office of Defense Transportation, today urged coal consumers to order next winter's supply now as a safeguard against possible future shortages. The ODT Director said the railroads could transport enough coal to meet prospective demands only if the fuel was kept moving steadily throughout the year, since there is not sufficient railroad equipment to provide a reserve for peak movements.

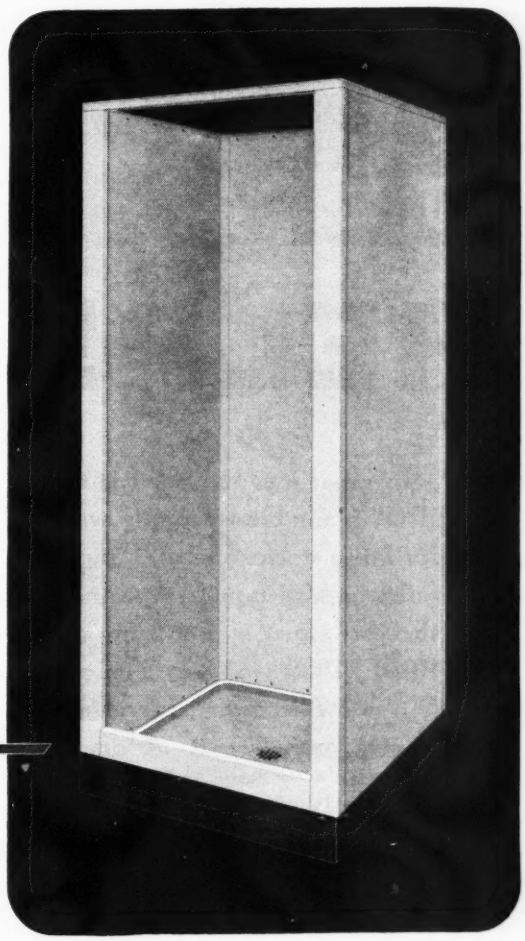
Mr. Eastman's statement follows:

"Transportation of coal from mines to consumers is today more than ever an all-rail job. The railroads have lost much of the help they used to receive from coastwise colliers and some of the help they had from motor trucks. And the volume of coal required to meet war demands is substantially larger. The railroads cannot do this big transportation job unless the coal is kept moving over the rails week in and week out all through the year.

(Continued on Page 59)

FIAT'S *Volunteer*

Ready, on a production basis, when the call came for a war shower

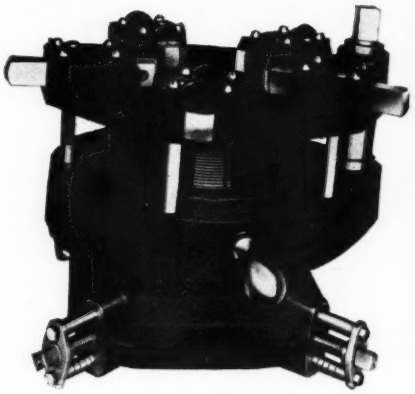


When the government called for a shower cabinet, designed to use a minimum of critical materials, Fiat was ready on a production basis with the Volunteer. The Design Division, Office of the Chief of Engineers, U. S. Government approved the Volunteer to meet the needs of the Nation for war housing and military cantonments. In addition to filling government requirements, Fiat is supplying the Volunteer for civilian needs through our regular jobbers when adequate priorities are available. The Volunteer is priced at $37.50, F.O.B. Chicago, Ill., Long Island City, N. Y., New York City or Pasadena, California.

● The Volunteer Model contains only 25 lbs. of steel—has patented construction of corner joints. A truly prefabricated product that can be set up in 18 minutes with a screwdriver the only tool required.

FIAT METAL MANUFACTURING COMPANY

1205 Roscoe St., Chicago. ● 21-45 Borden Ave., Long Island City, N. Y. ● 32 S. San Gabriel Blvd., Pasadena, Cal.



HELP!
HELP!

The demand is so great and the need is so urgent "TOLEDO" is unable to supply war requirements for large stocks and dies, pipe cutters, power drives and power pipe machines. Help the war effort by notifying us of any idle "TOLEDOS" of the models listed below. We will refer interested parties directly to you.—Do it at once, please.

"Toledo" No. 2½ Threader 4½" to 6" Capacity.
"Toledo" No. 3 Threader 4½" to 8" Capacity.
"Toledo" No. 25 Threader 2½" to 6" Capacity.
"Toledo" No. 4 Threader 9" to 12" Capacity.
"Toledo" Pipe Cutters—Nos. 250-300-350-400-40-80.
"Toledo" Power Drive or often called a "Mule."
"Toledo" No. 999 Power Pipe Machine ½" to 2".
"Toledo" 2" High Speed Power Pipe Machine ½" to 2".
"Toledo" No. 1-2-4 Power Pipe Machine 1" to 4".

BUY WAR BONDS AND STAMPS

THE TOLEDO PIPE THREADING MACHINE CO.
TOLEDO, OHIO NEW YORK OFFICE, 502 No. 2 RECTOR STREET

"TOLEDO"
MAKERS OF FINE
PIPE TOOLS, POWER PIPE MACHINES, VISES, BENCHES

Our Industry
June, 1943

The Heating Industry Is Ready . . . For Drive to Conserve Fuel

WITHOUT violating confidences, now it can be said that a high Government official several months ago predicted the coming crisis would be on the home front.

As far as fuels are concerned, that crisis is now here. Users of oil for heating purposes have been well aware of the home front crisis for months past. Users of coal, unless they are living in a world of make-believe and wishful thinking, are fast becoming awake to the fact that they, individually, must do something to cut down their consumption during the coming winter.

Fuel conservation in general is today's most widespread home front crisis and it is touching everyone who will depend upon artificial heat for warmth next winter.

The Government is doing something about the fuels problem. It is launching a nation-wide campaign to bring about efficiencies in heating plants and in buildings to be heated, which, together, can make tremendous savings in the amount of fuel needed. Washington officials predict that this campaign will be comparable to the second war loan drive.

There are some facts which stand out unmistakably clear in their relation to the entire subject of conservation and to basic methods by which the campaign can reach the high goals necessary to avert suffering and tragedy next winter. First and most obvious is the one that heat is essential, not only to health and human existence, but also to the high rate of production necessary to maintain our industrial machine and to supply the war effort with quantities of material sufficient for ultimate victory.

A second fact is that there is a definite point of diminishing returns in reducing consumption merely by shutting off available supplies. This is mentioned because the conservation of oil last winter was based (aside from conversions) mainly on reducing the amount of heat available by controlling oil allotments. Very considerable savings in solid fuel can be made by following the practice established for oil users, namely, reducing their supply of coal.

However, after everyone has been rationed to his minimum needs, further savings commensurate with the war efforts can only be made through increased efficiencies in the building being heated and in the heating equipment utilizing the fuel.

The heating industry is the American public's No. 1 means for avoiding the disastrous possibilities inherent in our very limited available fuel supplies.

Manufacturers of heating equipment, and contractor-dealers who sell and install it, have made available to the American public a high degree of technical and engineering skill in the installation, maintenance and servicing of that heating equipment. These men and their organizations with their years of successful experience in bringing about efficient heating, do not need to be brought into motion. They already are bending every effort to furnish their services where they will be most effective.

The heating industry in all of its branches is anxious to redouble its efforts. A widespread survey now being carried on by your editors establishes this as a truly inspiring example under today's war conditions.

However, in the months to come, one important fact must not be disregarded. The true conservation of fuel depends not alone upon patriotic motives. It is equally dependent upon well-established and basically sound laws of economics which must not be disregarded even in times of war. In fact, to disregard them is to be guilty of neglecting one of the strongest forces available to us in the successful prosecution of the war effort. Unless the heating industry is to be subsidized by the Government in its fuel conservation efforts (and no right-thinking individual in our industry is asking this), manufacturers, wholesalers and contractor-dealers who have so much to offer fuel conservation must be equipped to do this vital job.

In the last issue, it was demonstrated that critical materials and manpower must be allocated to the manufacture of coal cars, mining machinery and other equipment to take the place of facilities now wearing out and breaking down, if our minimum coal requirements are to be met. Likewise, in the May issue it was demonstrated that a fraction of the amount of the materials necessary for coal cars, etc., if allocated to the manufacturer of devices and equipment for saving fuel, would produce tremendous reductions in fuel consumption with corresponding reductions in the need for mining and transportation facilities.

Investments on the part of fuel users, in fuel savings, pay triple dividends. First, the device or product or equipment itself will produce a saving. Second, the purchaser's stimulated interest because of the investment involved invariably leads to savings entirely aside from those produced by the equipment. The third dividend in fuel savings comes as a result of the contractor's responsibility and interest in seeing that his customers receive even more for their money than originally promised by the fuel saving device he has sold and installed.

All signs indicate that the heating industry will have adequate opportunity for bringing about necessary fuel savings. Our industry can be depended upon to rise fully to this opportunity.

WAR PRODUCTION BOARD

WASHINGTON, D. C.

Industry's

May 25, 1943

IN REPLY REFER TO:

Mr. O. T. Carson, Publisher
Domestic Engineering
1900 Prairie Avenue
Chicago, Illinois

Dear Mr. Carson:

All fuels must be regarded as critical materials and as such must be subjected to the most careful and sparing use.

The Government is initiating a program to publicize methods whereby fuel savings can be accomplished. This program is being launched immediately so that surveys and work can be started now and carried on during the summer months, to the end that heating systems can be put in condition to operate with maximum efficiency during the next heating season.

Responsibility in the task rests with all who are concerned with the problem. Heating and plumbing contractors can contribute importantly as they are a direct point of contact with home owners and other consumers of these vital fuels. Home owners, for example, must recognize that conservation of fuel is dependent both upon retaining the heat in the building and in obtaining the maximum efficiency from the fuel. Insulation, weatherstripping, storm doors and windows serve to retain the heat in the building. Unless the heating equipment is operating at maximum efficiency and unless a maximum of heat is extracted from the fuel and delivered efficiently to the area to be heated, full benefits from the conservation program will not be forthcoming and the war effort will suffer.

In order to accomplish this, heating systems should be carefully checked and cleaned. For example, the efficient and economic operation of coal-fired boilers and furnaces will require the checking of chimney, smoke pipe, drafts, dampers and controls. Oil burners, stokers and gas-fired equipment likewise should be checked. The insulation of the distribution parts of the heating plant can be a helpful contribution.

If the whole conservation program is to attain its goal, the efforts of all branches and individuals of the heating and plumbing

FOR VICTORY

industry must be utilized to the fullest extent. The users of all fuels are included in the program and conservation must be effected in all types of buildings, including homes, schools, stores, churches, office buildings, factories, and government institutions. The heating and plumbing industry can make a tremendous contribution to this program and the Government is confident that it will carry out its responsibility.

Very truly yours,

John J. Hall
Deputy Vice Chairman
for Industry Operations

BIGGEST *Job* . . . . .

Domestic Engineering Photo

John J. Hall, deputy vice chairman for Industry Operations, War Production Board, whose letter to our industry on the vital topic of fuel conservation is reproduced on the facing page. In his present position, Mr. Hall has supervision over five bureaus which, in turn, comprise most of the industry divisions. One of these many divisions is the Plumbing and Heating Division; others are concerned with construction, utilities, mining and minerals, consumers' goods. Mr. Hall's position is an important policy-making one for problems involving the supply and flow of critical materials; the utilization of facilities; determining the present and anticipated supply of the requirements for critical resources.

Necessity . . . .

Leadership . . .

OUR industry's biggest job for 1943 is introduced by the letter of John J. Hall, deputy vice chairman for Industry Operations of the War Production Board.

The "biggest job" is fuel conservation. It comes as a result of the critical shortages of fuel oil at points of consumption and the growing shortages of coal and other fuels which are foreseen.

The first question which arises is, "What can our industry do to help offset fuel shortages?"

The answer to this question will be found in succeeding pages of this issue.

The second question is, "What will the Government do to assist

(Turn to next page)

John J. Hall, deputy WPB vice chairman and key policy-making official, tells our industry of its biggest job of 1943--fuel conservation. The Office of War Information aids in educational effort comparable to the 2nd war loan drive including six to eight radio shows daily, advertising, publicity. Coal, oil and gas to be featured equally. This issue fills in the entire background and supplies complete how-it-will-be-done as well as-how-to-do-it information

Multi-Million Dollar Promotional Campaign to Sell Fuel Conservation

our industry to sell this program . . . how will the Government tell the American people of the pressing need to institute all possible fuel saving measures?"

The answer to this question is that the Federal Government is launching an educational program on fuel conservation which officials believe will be comparable in size and scope to the recent second war loan drive.

The Office of War Information is the agency which will tell the public. This agency is receiving information from private industry and from other Government departments, then funneling it to the public through the radio, newspapers, magazines, and other media.

The Conservation Division of WPB, under Howard Coonley, is primarily responsible for supplying OWI with the data which that agency passes along—in dramatic form—to the public. The theme of the campaign is symbolized in the slogan "Get Ready for Winter."

Starting this month, the Office of War Information has from six to eight national network radio programs scheduled to carry the fuel conservation story every day through 850 individual stations. All of the major chains —NBC, CBS, Mutual and the Blue Network—are scheduled to participate. Fuel conservation messages will be worked into the radio shows of many of radio's most famous "names."

Working with a large advertising agency and with a company distributing material to newspapers, OWI is preparing a series of full-page advertisements to be carried by newspapers all over the country. These advertisements consist of a central story, well illustrated, and space is left elsewhere on the page for tie-in advertisements by local firms and contractor-dealers who can supply the public with a fuel conservation service.

Newspaper publicity and magazine articles also are planned.

The "fact sheets" on the campaign, as prepared by the Office of War Information, state: "Next winter will be one of the most critical periods of the war for millions of civilians unless they take steps now to prepare their homes for cold weather.

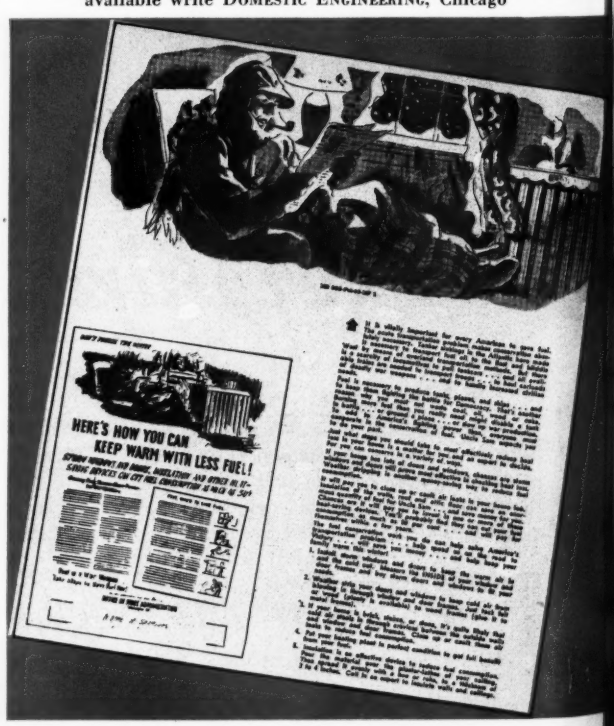
"Last winter severe weather caused hardship in many areas. We cannot afford to have the health of war workers endangered; therefore, it is extremely important that we solve the heating problem caused by wartime fuel shortages and oxertaxed transportation facilities.

"Although fuel needs vary in different sections of the country, the maintenance of health and morale is a *national* problem. The heating industry, alone, cannot shoulder the enormous job of telling the American public that now is the time to get ready for next winter.

"Here are the things that can be done now to help ward off sickness and epidemics next year . . . to help maintain health and morale . . . to help make America

(Continued on page 52)

Two more advertisements are shown on the facing page. Mats, which will enable your local newspaper to reproduce these advertisements, may be available to that newspaper through a nation-wide service; check this with your newspaper. If they are not available write DOMESTIC ENGINEERING, Chicago



The reproduction of the newspaper advertisement at the immediate right is one of a series which is being made available to plumbing and heating contractors throughout the country. By means of these advertisements contractors are enabled to tie into the nation-wide publicity campaign on fuel conservation

THIS WON'T BE YOU IF YOU

Get Ready for Next Winter Now!

SURE, Uncle Sam wants you to save fuel—and transportation, too—to fight this war . . . but that doesn't mean you'll have to get used to *heatless days* next winter! You won't have to spend the cold waves shivering at an icy hearth . . . or dressed like an Arctic trooper for an evening at home! You can KEEP WARM and SAVE FUEL, too—IF you do something about your home *now!*

There are many steps which you can take to assure yourself of heating comfort next winter, and —at the same time—help to save fuel and transportation for our production lines and our fighting fronts! You can keep the warmth *in* and the cold *out* by installing STORM WINDOWS and DOORS. But don't delay ordering them. Act today!

INSULATION is an effective First Aid for fuel-savers that's too important to overlook! Scientific tests have shown that insulation saves up to 30% of heating cost! If the floor of your attic is not covered, you can easily do the job yourself. If a floor has been laid, better call in an expert to insulate!

WEATHERSTRIPPING is another staunch ally in fighting chills . . . it's your best bet for keeping cold air from blowing in through window and door frames! And don't forget to close up and caulk any heat-wasting air leaks between your outside walls and your window and door frames!

Needless to say, one of the greatest single factors in keeping warm is to keep your FURNACE in fighting trim! Have it inspected and cleaned now to get the fullest benefit from your fuel!

Whatever you do, start *now* to get ready for next winter! Map out your own, personal *winterizing* program. Call in an expert to help you decide which of the steps outlined above will be most effective in *your* home. Next fall may be too late! Materials and labor may be scarce then. Don't put it off—act now!

INQUIRE ABOUT AN FHA LOAN

WINTERIZE YOUR HOME with an FHA Loan

New Terms Just Announced

No down payment. First payment November 1.

Install insulation—storm doors and windows—weather-stripping NOW and begin paying next fall on the FHA pay-out-of-income plan. See your bank or dealer.

Federal Housing Administration institutes delayed payment plan for fuel conservation improvements. Here's the OWI schedule of fuel conservation radio programs and information on the advertisements which contractors may tie into in local newspapers

strong—to the end that war production goals will be met.

"(a) Install heat saving measures designed to keep the cold out and thus reduce fuel consumption.

"(b) Place orders for coal immediately and give your dealer latitude on the type, grade and size of coal he is able to supply, and on the time of delivery.

"(c) Check up on all heating equipment, whether oil, coal or gas, to insure peak efficiency. Chances of getting new equipment are slim, so the present furnace must be kept in good condition.

"This is a campaign born of wartime necessities. And, because it is vital to winning the war, the Government is helping to increase the flow of fuel to shortage areas, but there can be no assurance that conditions will be any less severe than last year unless everyone cooperates during the spring and summer."

The "fact sheet" also explains the background for the current need to conserve coal as well as oil and gas.

It will be noted that, under point three in the program above, home owners and building operators will be urged to bring their heating systems to top efficiency. First emphasis in the campaign so far, however, has been given to the idea of "conditioning" the home for winter. Donald M. Nelson, chairman of WPB, emphasized the values of insulation in a statement of May 18 in which he directed the Conservation Division to work closely with OWI in developing the huge conservation program for 1943.

"Before we begin burning fuel next fall," said Mr. Nelson, "we should be very sure that the heat container, the house itself, is prepared to use the fuel most efficiently." Pointing out that most homes can be insulated without the use of highly critical materials, Mr. Nelson urged home owners to take immediate steps to condition their buildings.

Brooks Darlington, program chairman for OWI on the fuel conservation drive, realizes the importance of the heating plant as the heat generating and distributing system. Our industry is currently giving Mr. Darlington information on fuel savings which can be effected by means of the heating plant itself. This part of the educational program is discussed elsewhere in this issue.

Giving practical assistance to the fuel conservation program, the Federal Housing Administration has announced a special delayed payment plan for financing fuel conservation work. Under this plan, Title I loans up to $2,500 can be made for heat conservation installations between now and September 1, with the first payment delayed until as late as November 1, 1943. This is strictly a wartime measure and applies only to fuel conservation work.

Ernest P. Jones, Jr., assistant FHA commissioner, has stated: "This special plan of financing should assist industry in overcoming the sales resistance often encountered when prospects are asked to purchase immediately materials and services which may not be needed for several months. Manufacturers whose products are related to fuel conservation are urged to participate actively in this nation-wide program.

"Fuel of all kinds must be saved; transportation must be conserved. Here, then, is an opportunity for manufacturers to perform a patriotic service, as well as to help dealers maintain themselves during the emergency."

DOMESTIC ENGINEERING is now obtaining from FHA a list of the products which may be included in fuel conservation loans.

Radio Programs

The following nationwide radio shows will carry "Get Ready for Winter" messages on the networks and at the times indicated:

	PROGRAM	NETWORK
MONDAY, JUNE 7		
7:45- 8:00 am	Reveille Roundup	NBC
12:15-12:30 pm	Big Sister	CBS
2:15- 2:30 pm	Lonely Women	NBC
3:00- 3:15 pm	Arthur Gaeth—News	Mutual
6:00- 6:25 pm	Music by Shrednik	NBC
6:01- 6:15 pm	Phillip Keyne Gordon	Mutual
10:00-10:15 pm	Raymond Gram Swing	Blue
10:30-11:00 pm	Three Ring Time	CBS
TUESDAY, JUNE 8		
11:15-11:30 am	Vic and Sade	NBC
1:30- 1:45 pm	Vic and Sade	CBS
1:30- 1:45 pm (split)	Dix Farm Club	CBS
5:15- 5:30 pm	Dick Tracy	Blue
6:30- 6:45 pm	John B. Kennedy	CBS
7:30- 7:45 pm	Richfield Confidentially Yours	Mutual
8:30- 9:00 pm	Duffy's	Blue
11:15-11:30 pm	Richard Harkness	NBC
WEDNESDAY, JUNE 9		
11:30-11:45 am	Bright Horizon	CBS
1:45- 2:00 pm	Carey Longmire	NBC
5:00- 5:15 pm	Sheelah Carter	Mutual
5:15- 5:30 pm	Mother and Dad	CBS
10:00-11:00 pm	Kay Kyser	NBC
10:30-10:35 pm	Alec Templeton Time	Blue
THURSDAY, JUNE 10		
11:45-12:00 noon	David Harum	NBC
12:00-12:15 pm	Meet Your Neighbor	Blue
3:00- 3:15 pm	Arthur Gaeth—News	Mutual
5:00- 5:15 pm	Hop Harrigan	Blue
5:30- 5:45 pm	Are You a Genius	CBS
6:45- 7:00 pm	Lowell Thomas	Blue
8:30- 9:00 pm	Busy Mr. Bingle	Mutual
FRIDAY, JUNE 11		
9:00- 9:30 am	Everything Goes	NBC
9:45-10:00 am	The Breakfast Club	Blue
1:15- 1:30 pm	Baron Elliott's Orchestra	Mutual
2:30- 3:00 pm	Mutual Goes Calling	Mutual
6:45- 6:55 pm	The World Today	CBS
8:00- 8:30 pm	Kate Smith Hour	CBS
11:15-11:30 pm	Richard Harkness	NBC
SATURDAY, JUNE 12		
8:15- 8:45 am	Dick Liebert	NBC
9:30- 9:45 am	Garden Gate	CBS
3:30- 4:00 pm	F.O.B. Detroit	CBS
6:00- 6:15 pm	Frazier Hunt	CBS
6:00- 6:15 pm (split)	Lynn Chalmers Sings	CBS
7:00- 7:30 pm	The Falcon	Blue
SUNDAY, JUNE 13		
10:00-10:30 am	Fantasy in Melody	Blue
12:00-12:30 pm	Emma Otero	NBC
1:45- 2:00 pm	Col. Stoopnagle	CBS
2:30- 2:55 pm	World News Today	CBS
7:00- 7:15 pm	Drew Pearson	Blue
8:00- 8:30 pm	Chase & Sanborn	NBC

Howard Coonley, director of the Conservation Division, War Production Board. Mr. Coonley is well known to our industry as chairman of the board for Walworth Co. and nationally prominent also as a past-president of the National Association of Manufacturers. The Conservation Division is primarily responsible for the success of the huge new fuel saving campaign. The Division furnishes information and guidance to the Office of War Information which incorporates data on insulation, storm windows, weatherstripping, heating plant controls and regulators, and other fuel saving devices into radio programs, newspapers, magazines and other educational media. Thus, Mr. Coonley is well qualified from all viewpoints to author the article below

Domestic Engineering Photo

Conservation Chief Points Opportunity

By Howard Coonley

Director of Conservation Division, War Production Board, gives our industry his views on the exceptional opportunity for service offered by the threatening shortage in coal as well as oil and gas. Heating and plumbing contractors are urged to assist home owners and building operators in three ways to save fuel . . . put the heating system in top condition; stop building heat loss; and teach proper firing

MY message to the members of the heating and plumbing industry (which I know well from long experience in it) is of special significance at this time. It is not news that the fuel situation is critical. Increased production quotas for combat equipment have steadily drained fuel supplies to provide power to run the greatest war production machine in the world. But there is news concerning fuel which we must get to all home owners and building operators in the nation—the news that for the duration measures must be taken to provide for maximum utilization of the curtailed fuel supply that will be available for civilian consumption.

To maintain the health and morale of our civilian workers on the war production lines, it is essential that home and factory temperatures remain at a safe minimum during the waking hours. The problem is to attain and retain this temperature with a minimum quantity of fuel.

Manpower problems at the source of fuel supply and transportation facilities constantly overburdened with rush deliveries for war orders have been responsible for limiting the supply of fuel for residential, institutional, commercial and industrial heating. Measures must be taken promptly to make the available fuel supply yield maximum heat.

Recognizing the need to educate the public to the methods of fuel conservation and to make them fully cognizant of the problem of fuel shortages and the health hazards involved, the Conservation Division of WPB is cooperating with the Office of War Information in planning and projecting an intensive educational campaign. All media will be employed to present a true picture to homemakers all over the nation, and to encourage prompt action in respect to conditioning the home and the heating unit for the coming winter.

Before delving into the actual mechanics of the heating unit, a primary aspect to be considered is the heat "container," namely, the building itself. Obviously, well insulated buildings may be heated much more economically than buildings uninsulated or partly insulated. Broad experience has proved that a complete insulation will save up to 30 per cent of the total fuel consumption in an average structure. For each building thus conditioned, in terms of contribution to the war effort, this will cut down 30 per cent of fuel transportation and 30 per cent of fuel preparation. In terms of economy to the building operator or owner, there is a 30 per cent saving in fuel costs.

(Continued on Page 58)

HERE *are the Products* FOR FUEL

BRIEFLY explained in this section are many of the methods and many of the products which the heating industry has developed and which can save great quantities of fuel.

These do not, of course, comprise all of the services and products which have a place in this feature. Additional suggestions will be made in succeeding issues of DOMESTIC ENGINEERING.

In selecting and tabulating information contained in these pages, every effort has been in the direction of being conservative. While the average building owner or layman may be surprised at the amount of savings listed here, heating and plumbing contractors, engineers, manufacturers and others in our industry are well acquainted with the vast possibilities for fuel savings, and their actual experiences in connection with specific jobs have, on countless occasions, produced economies and efficiencies far in excess of those listed.

In considering the accompanying suggestions for saving fuel, it should be kept in mind that, nataurally, greatest showings on a percentage basis will occur where poorest conditions exist. For instance, a general plant overhaul will show the greatest fuel savings on a system which has been grossly neglected. Likewise, insulation will make the best percentage showing when it is installed in sieve-like buildings.

Another point to keep in mind is that the layman might be inclined to add all of the possible percentages, much like the proverbial automobile owner who was sold a number of gasoline saving gadgets, and after he had added all of the percentages, he decided to go into the gasoline business with the amount he estimated he would drain out of his tank with continuous driving.

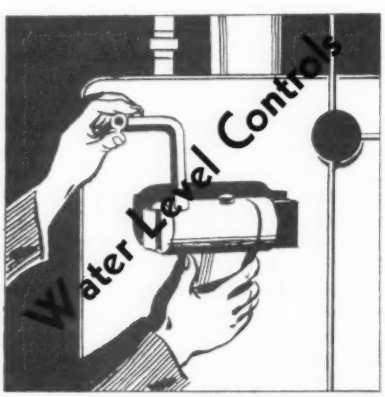
Obviously, percentage savings are applied against the over-all efficiency of the system when the improvement is made, and as the heating plant becomes more efficient, the actual amount of fuel which can be conserved becomes less.

The following detailed analyses have been selected and prepared from the best authoritative information available, including research investigations conducted at the nation's leading universities and colleges, manufacturers' data from their testing and engineering departments, heating contractors' experiences and others.

Vacuum Cleaners, Brushes

Vacuum cleaners and brushes to clean the heating surfaces of boilers and furnaces have an important role in the conservation program. W. S. Harris, special research associate at University of Illinois, writing in the University's booklet, "Save Fuel for Victory," declares, "For maximum efficiency heating surfaces should be clean. One thirty-second inch of soot or fly ash on the heating surfaces can easily cause an increase in the seasonal fuel consumption of five per cent or more. Therefore, at least once a year and oftener when necessary, the heating surfaces should be cleaned . . . by means of a stiff brush or by a vacuum cleaner especially designed for the purpose."

This five per cent loss in a boiler burning 20 tons of coal per year means that 1 ton per year is being wasted.



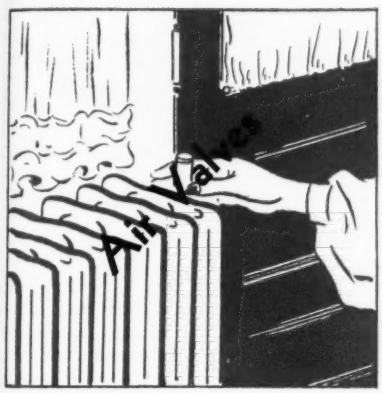
Water Treatment

Breaking down rust, scale and corrosion inside the boiler is as important as seeing that the produced heat is efficiently released in the living quarters. If the boiler is crusted with scale, oily and dirty, the heat cannot get to the water and steam forms with much greater difficulty than in a clean unit. Water treatments reduce the rust, scale and dirt to a fine compound and float them away in the boiler water. At the end of the cleaning process all this contaminating matter is drawn out of the boiler and is flushed clean. Savings here, too, are hard to determine because of the many variables in heating systems, but the job is extremely worthwhile.

Water Level Controls

Water level controls belong in this section because they save both fuel and metal. Primarily designed as safety equipment — to prevent the probable loss of the entire boiler through low water damage—these controls also save fuel by feeding just the amount of water required in the boiler to keep the level up to the minimum height. They prevent overfilling, which usually takes place in hand operation. With the water line maintained constantly at the correct level, steam can be generated faster, and with less fuel. Inasmuch as these controls are designed to save entire boilers, their metal, as well as fuel-conserving value is obvious.

HERE *are the Methods* SAVING!



Boiler Covering

All domestic heating boilers which are not insulated by the manufacturer should have at least 1 in. of good insulation and preferably 1½ in. Blocks of 85 per cent magnesia can be used and these in turn covered with ½ in. of asbestos insulating cement. This combination is calculated by one manufacturer to effect a fuel savings of more than 2¼ tons of coal per year for a boiler of 30 sq ft grate area.

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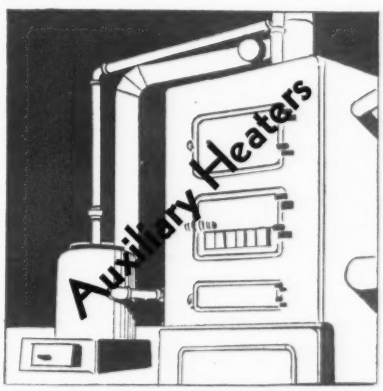
Auxiliary Heaters

Savings up to 50 per cent of the oil normally consumed! That's a record which auxiliary heaters normally used for heating domestic water have hung up in some Eastern installations. The chief purpose of these heaters in this connection is to shift the heating lead from oil to coal without complete replacement of the oil burner. A word of caution, however—it takes coal to operate the tank heaters, and coal is also going to be on the "must conserve" list this winter. Also, order L79 does not permit the sale of **new** tank heaters for installation in this manner although modifications may permit this later.

Used tank heaters may be installed, of course, and used for garbage and rubbish burning; these heaters can then supplement the oil-fired boiler. The use of tank heaters in this manner was thoroughly explored in the March, 1943, issue of DOMESTIC ENGINEERING.

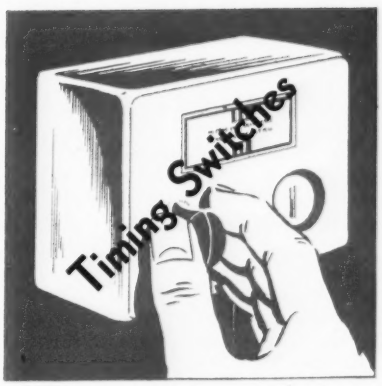


Building Insulation

DOMESTIC ENGINEERING has covered, in past issues, the subject of fuel savings through house insulation. One of the best and briefest statements covering savings which can be expected has been made by Prof. A. P. Kratz, University of Illinois. "The total heat loss from the average house includes about 27 per cent through the walls, 30 per cent through doors and windows and 27 per cent by air leakage through cracks around windows and doors.

"Accordingly, for the average two-story house, from ten to fifteen per cent is a conservative estimate for the possible saving in fuel accomplished by insulating the walls alone. An additional ten per cent may be obtained by insulating the second story ceilings. This makes a total saving from twenty to twenty-five per cent from insulation equivalent to 1½ in. of rock wool."

Prof. G. L. Larson, University of Wisconsin, has revealed through tests on his own home, that complete insulation and storm doors and windows can save up to 55.9 per cent of the fuel.



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Combustion Testing

A CO_2 recorder or combustion testing instrument will tell if all the heat possible is being obtained from the fuel. When a pound of carbon is burned to CO_2, 14,500 Btu are released. When it is incompletely burned, or burned to form CO, only approximately 4,400 heat units are released, a considerable loss of heat . . . approximately 10,000 Btu per lb. Thus, out of every pound of coal which goes into the making of heat there may be as much as 2½ lb of additional coal wasted. The value of a CO_2 recording instrument as a fuel saver is obvious.

PRODUCTS Fue

Draft Controls

One of the basic fuel conservers offered by our industry is the draft control. This subject was covered in detail in last month's DOMESTIC ENGINEERING "Coal Cars Versus Controls."

One manufacturer estimates that the average of his smaller draft controls saves 1,200 lb of coal per year; larger models save proportionately more fuel. They require little critical materials.

The draft control is one of the first means of fuel conservation which the contractor will suggest to customers whose heating plant lacks this important mechanism.

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Stokers

The value of stokers in the field of fuel conservation is attested to strongly by the fact that the WPB recently urged manufacturers of stokers to step up their production. Poorly fired coal . . . and hand-fired coal usually is poorly fired . . . results in terrific fuel wastage. Many of the volatiles are driven from the coal in the form of gas and escape unburned up the chimney unless properly fired.

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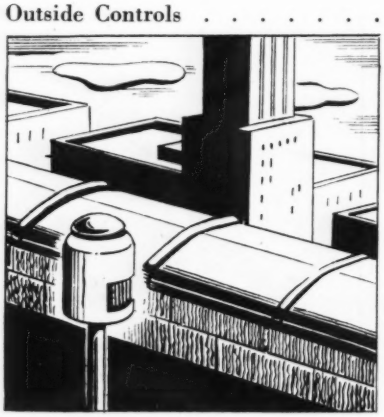
Air Valves

While no specific technical data on the subject is available nor have any laboratory tests been made to our knowledge, it is known that dirty, clogged or worn-out air valves waste fuel. The function of an air valve is to allow the entrapped air in the heating system to escape and thus permit it to fill up with steam. If this venting takes place rapidly the system is heated rapidly; if it occurs slowly or not at all, heating is slow or actually impossible. Steam radiators, steam mains, condensation pumps, forced hot water convectors, and unit heaters are just a few of the heating items which require proper venting.

Outside Controls . . . . . .



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Pipe Covering

The use of pipe covering could result in a huge countrywide savings of fuel. In order to arrive at a conservative figure for just one heating system let us assume that there are 200 lineal feet of 1½ in. pipe, or its equivalent, which can be insulated. Tables on heat loss through insulated and uninsulated pipe show that a 1½ in. pipe without insulation will lose 134 Btu per lineal foot per hour with a temperature of 180 deg F inside the pipe. With 1½ in. insulation this same length of the same size pipe would lose only 24 Btu. Multiplying both values by 200 lineal feet we get 26,800 Btu for the uninsulated pipe and 4,800 for the insulated, a saving, by using insulation of 22,000 Btu per hour. A conservative estimate of the length of an average heating season would be 1,000 hr. This figure multiplied by the 22,000 Btu per hr saving gives us 22,000,000 Btu saved per year. If the coal being burned were 11,000 Btu per lb coal the insulated pipe would save 2,000 lb or 1 ton per year.

Boiler Insulation . . . . . .

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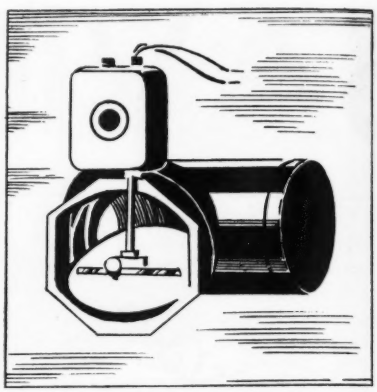
Adding Boiler Sections

Many sectional boilers which were converted from coal to oil burning were allowed to retain the same number of sections as they had when they were coal fired. This opens a vast field for fuel conservation. Read the following report—the result of tests conducted by the U. S. Department of Agriculture: "Tests conducted . . . on 25 in. round hot water boilers showed some interesting results as to savings realized by the addition of numbers of sections.



Draft Controls . . . . . .

"The smallest was a four-section boiler . . . The next larger boiler . . . a five-section boiler, and the largest was a six-section boiler. These tests showed that to achieve the same heating results the five-section boiler studied required 15 per cent less fuel than the four-section boiler studied, and the six-section boiler studied required 25 per cent less fuel than the four-section boiler."

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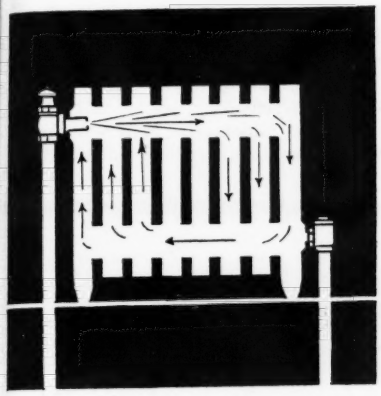
Damper Regulators

Damper regulators, designed primarily for the control of hand-fired coal jobs are a "must" suggestion in a great number of cases. The slight amount of critical material required for these was shown in DOMESTIC ENGINEERING for May. Their greatest advantage is in checking coal-fired jobs to prevent over-

Boiler Compounds . . . . . .

Savings METHODS



Steam Traps . . . . . .

heating, with a consequent waste of fuel. Likewise, by opening drafts in time to avoid under-heating, later uneconomical forcing of the heating system is avoided.

Manufacturers claim average fuel savings up to one ton per year per job.

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Boiler Cement

An indeterminate amount of fuel can be saved by closing openings and cracks which permit air to leak into the combustion and flue passages of boilers and furnaces. A bulletin issued by the Engineering Experiment Station, University of Illinois, calls attention to the fact that air leaks around the fire door, ash door and between the sections all waste fuel. These leaks should be stopped up with any of the various asbestos cements on the market which are made especially to seal such leaks. It is obvious that the size of the opening or crack governs the amount of air leaking into the combustion chamber and the amount of air, in turn, governs the extent to which combustion efficiency is reduced. This is especially serious in the case of oil fired jobs. Uncontrolled secondary air in coal fired heating plants wastes fuel by diluting flue gases and by making close regulation of the fire difficult, if not impossible.

Building Insulation . . . . . .

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Central Control Systems

In large structures consuming considerable amounts of fuel, central control systems show big savings. The fuel conserving experiences on such jobs have demonstrated that the benefit can far outweigh the material involved.

One manufacturer's records reveal annual fuel savings of $1,229, $1,856, $1,399, $587, $4,270, $487, and $667, per year on seven representative central control installations. These jobs involved expert technical service by the installing contractor.

Air Filters . . . . . .

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Heating Systems

One manufacturer of forced hot water heating systems writes as follows: "According to compiled statistics about 50 per cent of all fuel waste is caused by overheating. The other 50 per cent is caused by inefficient combustion, inefficient firing devices, poor construction, lack of insulation and storm sash. . . .

"The chief cause of overheating is poor control and poor distribution. For example, a sluggish hot water heating system may actually be overfired in order to get distribution throughout the building. Our suggestion in these cases is a circulating pump." The percentage losses mentioned above speak for the savings which can be expected.

Combustion Testing . . . . . .

Baffle Plates

By directing the flow of hot gases in the proper paths the homeowner can, according to one authority, greatly increase the efficiency of his heating plant. Boilers having a minimum of secondary heating surface are the ones most likely to be benefited by the installation of baffling. Immediate and noticeable benefits listed for baffles are, briefly: fly ash is reduced; steam is generated faster; coke "trees" are kept smaller; the firebed is kept more uniform.

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Time Switches

Time switches have long been used to conserve fuel on automatically controlled heating systems . . . using stokers and oil burners. The percentage of savings cannot be generally stated as they depend on so many contributing factors present in each installation. There is, however, a very definite sav-

(Continued on Page 90)

Thermostats . . . . . .

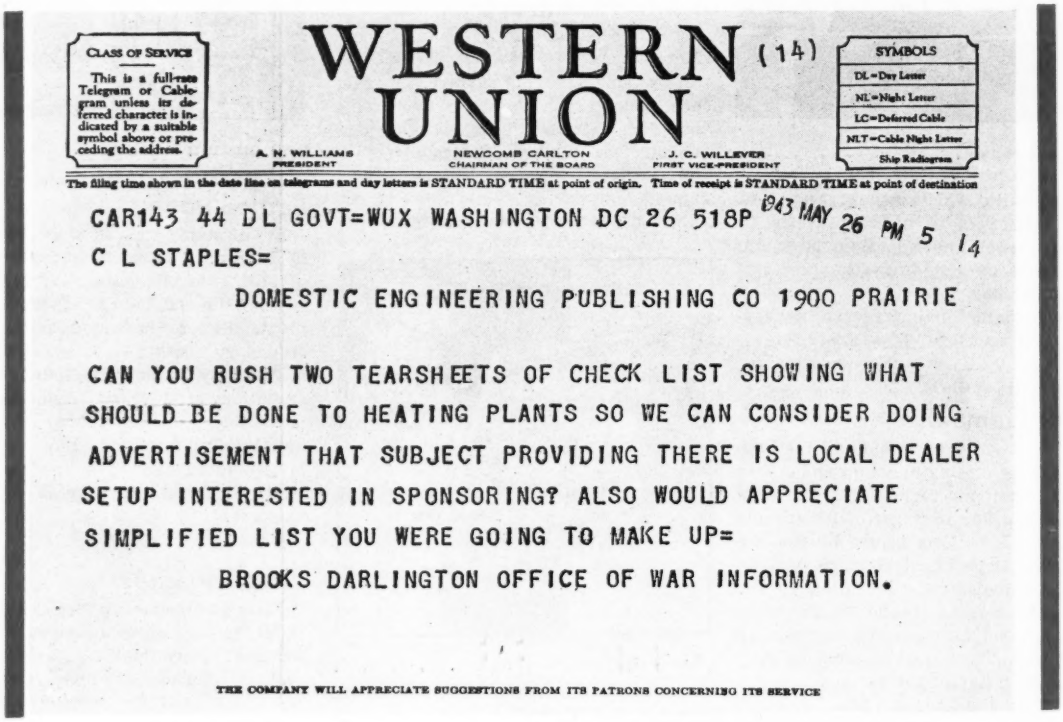
Coonley's Statement

(Continued from Page 53)

Fortunately, the materials generally required for stopping heat losses are non-critical and relatively easy to obtain. However, the manpower situation for work of this type will become progressively more acute. It is therefore advisable that plans be made now on a local level to schedule this work and avoid a last-minute-before-winter rush. Inevitably last minute plans will lead to disappointed home-owners who will unnecessarily suffer much discomfort during the coming winter.

Heating and plumbing contractors have an excellent opportunity to suggest insulation, weatherstripping, storm windows and caulking to home owners and building operators. In many cases, heating and plumbing contractors will be able to take the contract for jobs of this sort; in other instances, they may have working arrangements with insulation contractors whereby, furnishing sales leads to the insulation contractor, the heating contractor receives heating leads in return. All efforts should be taken to distribute this work in such a manner that all buildings will be heat conditioned before the first winter winds sweep through the cracks and crevices, carrying the heat away. Needless waste of fuel, transportation facilities and manpower, all indirectly related, are therefore avoided.

Of equal importance to a well insulated home is a properly functioning,



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C L STAPLES=

DOMESTIC ENGINEERING PUBLISHING CO 1900 PRAIRIE

CAN YOU RUSH TWO TEARSHEETS OF CHECK LIST SHOWING WHAT SHOULD BE DONE TO HEATING PLANTS SO WE CAN CONSIDER DOING ADVERTISEMENT THAT SUBJECT PROVIDING THERE IS LOCAL DEALER SETUP INTERESTED IN SPONSORING? ALSO WOULD APPRECIATE SIMPLIFIED LIST YOU WERE GOING TO MAKE UP=

BROOKS DARLINGTON OFFICE OF WAR INFORMATION.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Help for OWI

SEVERAL published DOMESTIC ENGINEERING articles on fuel saving have been sent to Brooks Darlington, program chairman of the OWI fuel conservation drive, in answer to the above telegram. It is expected that this material will be reflected in radio script, newspaper advertisements, and other educational media.

In addition, DOMESTIC ENGINEERING has queried all manufacturers of heating equipment for their suggestions. Finally, an invitation is extended to all members of our industry to submit to us their own ideas as to the best and most practical ways to save fuel. Such ideas and viewpoints will be sent to the Office of War Information.

Also needed are good slogans and punchy phrases showing the importance of an efficient heating system in the fuel saving drive. One slogan already used by the Office of War Information is, "Prepare Your House for Winter." Another might be, "See a Heating Expert."

What are your ideas? Address, Editor, DOMESTIC ENGINEERING.

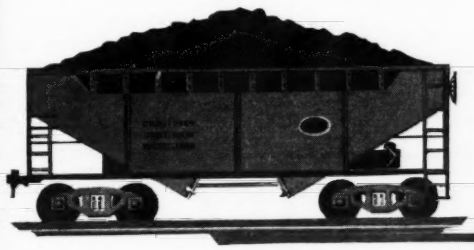
properly equipped, heating unit. It is possible to make a "thermos bottle" of the house and still waste tons of fuel because of the fact that, in the chimney, there is a direct connection with the cold outside air. The heating system, as a heat generator and distributor, is of equal importance with the building as a heat container. Gross waste of precious fuel caused by mechanical defects of the heating unit must be pointed out to the public by the heating and plumbing contractor.

The heating and plumbing contractor will see that the system has proper controls and regulators; that radiator valves and steam traps are in good condition; that the system is properly balanced so as to avoid excess heating of parts of the structure. In this emergency, the heating and plumbing contractor has the opportunity to make of his establishment a genuine "headquarters for fuel savings."

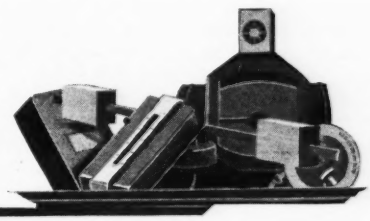
The heating and plumbing contractor should sell an all-around cleaning, servicing, and inspection service this summer, while he has men and trucks available for this very necessary work.

The heating and plumbing contractor also should assist the home owner and stationary engineer with suggestions on the proper firing and utilization of the fuel.

The three main points of the fuel conservation program are, therefore: (1) Insulation, (2) Properly functioning heating unit, and (3) Correct firing. We welcome the cooperation of industry in this task of consumer education for the conservation of fuel.



CONTROLS
COAL CARS



Here's the Way It Was . . .

THE leading article in last month's DOMESTIC ENGINEERING compared the role of heating plant controls and regulators, and the role of coal cars in providing heating comfort to the American public. It was shown that the manufacture of a greater number of heating plant controls and regulators would save tremendous quantities of coal and make unnecessary the construction of thousands of coal cars. Savings would also be effected, it was demonstrated, in mining machinery and in every other step of the fuel extracting, processing, and distributing chain of operations.

This study, as published in DOMESTIC ENGINEERING, closely paralleled an actual study then being carried on by the War Production Board. The net results, as shown in DOMESTIC ENGINEERING, were almost identical with the net results shown by the WPB study.

The WPB study was carried on, with the assistance of manufacturers in our industry, by a man empowered to cut across all organization lines between Government departments, to arrive at the facts. He called for and received the assistance of all Government agencies, divisions and departments whose work touches upon, or has significance in, the problem of fuel procurement, distributing and burning.

The final report—highly complimentary to heating plant controls and regulators as an essential means of saving fuel in this time of emergency — has been made available to all of the government departments.

Among these are the following:

The Conservation Division of WPB;

The Plumbing and Heating Division of WPB;

The Minerals Bureau of WPB;

The Office of Defense Transportation;

The Office of Civilian Requirements;

The Office of the Petroleum Administrator for War;

The Office of the Solid Fuels Administrator, and many others.

In connection with this report and study, it is important to remember that the conservation Division of WPB is responsible for furnishing the Office of War Information with data for use in the radio programs and advertisements discussed earlier in this section.

In addition to the above-mentioned divisions and agencies, numerous other Government departments have been cooperating in one way or another in the fuel conservation movement. For example, the Bureau of Mines and the Bureau of Standards have important roles. The War Department is carrying on an outstanding job of fuel conservation which will be discussed fully in succeeding issues of DOMESTIC ENGINEERING. This Department, for example, has conducted actual tests of temperature regulators in army camps, and the results of the tests are being made available to other army areas.

Coal Situation

(Continued from Page 44)

"There are not enough coal cars available, not enough locomotives, to provide a reserve for peak movements. Coal must be hauled in the warm spring and summer months as well as in the fall and winter months. If the movement slackens off in the non-heating season, the railroads will not be able to haul enough extra fuel next fall and winter to make up the difference, and suffering will result.

"The way for consumers to safeguard themselves against hardship is to place their orders for next winter's coal supply now. By so doing they will help keep the coal moving and help avert the otherwise serious risk of grave shortages next winter."

So Much . . . For So Little

Plumbing industry motion picture becomes a bargain in public relations for those using it. Extra money for promotion would extend same benefits nationally

EVEN without the benefits of a completely organized system of promotion and distribution, the plumbing industry motion picture "Ominous Arms Case" already has been shown to more than 90,000 persons.

This is the conservative estimate of William J. Lang, Chicago, president of Pure Water Films, Inc., the nonprofit corporation set up to produce and distribute the picture.

"It would be impossible to estimate the value the plumbing industry already has received and will receive as direct and indirect results of this 90,000 audience," Mr. Lang told DOMESTIC ENGINEERING, "but any plumbing contractor who has seen the film and studied its constructive message will realize that these benefits—to the public and to our industry—far outweigh the cost of producing the picture."

The film cost a little less than the $25,000 originally estimated.

The plan of Mr. Lang and his committee (Henry P. Reger, Chicago; Jere Murphy, New York City; C. M. Swinnerton, Los Angeles, and F. M. Dawson, Iowa State University) has been to place copies of the film in the hands of a booking agency which would guarantee a tremendous audience for it. The agency would stage local showings (furnishing projector and operator); would inform local contracting plumbers of the showings, and would give these contractors the opportunity to invite guests.

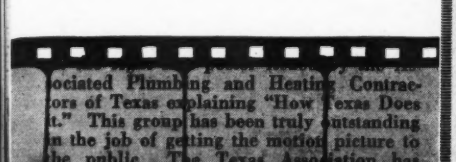
"Through this system of distribution," says Mr. Lang, "master plumbers and their associations would have all promotion and all detail work taken from their shoulders . . . and the audience would automatically be multiplied many times."

The $8,000 voted for this purpose at last year's Richmond Convention had not, as this was written, been utilized.

"Lacking this promotion fund," Mr. Lang states, "the film's success so far has been directly traceable to master plumbers in a few localities and to a few leaders who have unstintingly given their time and energy individually to promoting the film.

"C. M. Swinnerton and Loy Johnston have made remarkable progress in Southern California. Jere Murphy and E. D. Penfrase have labored unremit-

(Continued on Page 90)



ociated Plumbing and Heating Contrac-
ors of Texas explaining "How Texas Does
t." This group has been truly outstanding
n the job of getting the motion picture to
he public. The Texas Association has

HOW DOES TEXAS DO IT?

That question comes to us frequently from other states with reference to the public relations work now in progress in Texas, through the use of the plumbing industry moving picture "Ominous Arms Case." We attempt herewith to give a complete outline of the way it is being done in Texas.

1. Someone must be interested. There must be some leader in the state who is thoroughly sold, not only on public relations work generally, but particularly on the facilities available for such work in the plumbing industry; someone who can visualize the far reaching favorable results that can be obtained by properly informing the people of the hazards to health through faulty plumbing; that if properly presented to the right people, the spreading of such information will result in a demand for better quality plumbing, better regulations to protect the people against such hazards, better legislation to assure protective measures. Texas has such a man, who has this vision and who worked untiringly promoting this movement in Texas, long before the film was produced, not only selling the master plumbers on the value of such public relations work but all other branches of the industry as well.

2. The movement must have prestige. Public relations work is no good unless it is acceptable to the public. Such movement must therefore have prestige; it must be surrounded with an air of importance. Texas has gone about deliberately to build prestige for their educational program. This was done by a visit to the Governor of Texas, as soon as the first copy of the film arrived, advising him of the health education work proposed, asking for his approval. Then the picture was shown to Dr. Cox, State Health Officer, and Mr. Ehlers, State Sanitary Engineer, and to their entire staff. Dr. Cox was so impressed with the value of the picture as a means to warn the people against certain health hazards, that he wrote to all Health Units and Water Works Associations over the State, advising them to ask for a showing of the picture, which immediately created a demand for its showing.

3. There must be wide distribution. Public relations work done spasmodically and in a limited, haphazardous way, cannot be very effective. So, Texas developed a plan of distribution that would give the industry motion picture wide circulation all over the state. This was done by showing the picture to the Health Officers in various larger cities and selling them on the idea of taking over the showing of the film in their respective communities as part of their public health work, using the moving picture equipment which they already had. This plan met with tremendous success as the Health Officers welcomed an opportunity to show this picture and are cooperating one hundred per cent. Eleven copies of the film have been bought by the Texas Association so far and placed with Health Departments in various cities in Texas.

4. The movement must be financed. In order to have sufficient finances to carry on this work, Texas took the story to all branches of the industry. The picture was shown to mass meetings of master and journeymen plumbers to which wholesalers and manufacturers were invited. The purpose of the movement was explained and the results expected from it outlined. Results are that all branches of the industry are contributing finances toward the operation of this movement. Master and journeymen plumbers by direct contributions and wholesalers and manufacturers through advertising. All branches of the industry have been liberal with their contributions and the success of the program is assured from the financial standpoint.

5. There must be central supervision. Having a number of films working over the state requires central supervision and a central driving force to keep up interest in the work. Texas has this central supervision through their Executive Secretary.

6. Public interest must be developed. People will not come to see your program, so your program must be taken to the people. There is no reason why people should be expected to come to a public showing of the "Ominous Arms Case," specifically to see that picture. There are program committees, however, who are constantly on the lookout for outstanding programs for their respective clubs or organizations, and they welcome an opportunity to have a program arranged for them without too much effort on their part, particularly if it is an outstanding program. So, the picture must be taken to their programs.

7. Right people must be reached. In order to make this work most effective, we must reach those people who would likely be most interested in the subject matter to be presented. The showing of "Ominous Arms Case" is not intended merely for entertainment. The purpose of it is to wake the people up to the existing hazards in faulty plumbing and to be effective it must reach those people who are most interested in getting this information. Texas is, therefore, not interested in a slipshod program of distribution, but deliberately tries to reach the right people.

8. Demand for showing of picture must be created. Texas wants to particularly reach the parents, mothers, housewives, doctors, nurses, city officials, architects, engineers, etc. To reach that objective, the following plan is to be followed: Letters are to be written to every local Parent-Teachers Association where the film is in operation, advising them that the film is available for any of their programs, and at the same time selling them on the picture as an extremely interesting and entertaining picture, chuck full of valuable information pertaining to health. The same kind of letter is to be written to secretaries of all luncheon clubs. These groups include all of the specific people we want to reach, and from these groups we will get invitations to show the picture to other groups, such as church organizations, dads clubs and any number of women's clubs. It has already been demonstrated in Texas that the people are interested in the program, but the picture must be shown under the most favorable conditions, which will be accomplished by following the foregoing outline.

That, in short, is a complete outline of how Texas is doing it. While progress beyond all expectations has already been made, the job has really just begun. Some of the work is still in the stage of preparation, but is developing as rapidly as possible. Texas plans to inform upward to a million people in that state, during the next twelve months, what plumbing really is, and how closely it is related to their health.

By doing this work Texas is rendering a valuable public service. To keep it strictly on a public service basis, no advertising of any kind is permitted to enter into the program. The picture is sponsored as a public health program by Health Departments. If reference has to be made to the origin of the picture, it is publicized as a picture produced by the plumbing industry of the nation. Under no circumstances are local master or journeymen plumbers permitted to advertise or publicize the picture as sponsored by their organizations or any individual. As a matter of fact, care is taken to keep the master and journeymen plumbers in the background. The reason for that is not to give the people the mistaken impression that the plumbers are trying to promote something for themselves.

The results we expect to get by doing the job thoroughly is to mold public opinion in favor of a better quality plumbing; to get faulty plumbing in public places corrected for the sake of health protection; to take more interest in the enactment and enforcement of ordinances to protect them against shoddy plumbing work; and finally, to get a state plumbing code that will give them the statewide protection to which they are entitled.

This work which is being done in Texas can be done in all other states, and, if it is done in all states, it will definitely change the picture so far as public opinion is concerned. There is no end to the value of this kind of public relations work, and Texas plans to make it a permanent program from now on.

Extra copies of this outline are available by writing to the Associated Master Plumbers of Texas, 4316 Kenwood Court, Fort Worth, Texas.

LEAD—and Its Job in Conservation

AN official statement from the War Production Board explains the present position of lead as a critical material and its availability for use by the plumbing industry. Because certain traditional uses of lead have involved a corresponding use of extremely critical tin, the following letter from E. Vogelsang, director of the Tin-Lead Division, WPB, is reproduced in its entirety.

To the Plumbing Industry.

"The Tin-Lead Division of the War Production Board has long recognized the essential nature of plumbing and its part in the war housing program. It has placed no restrictions on the use of lead for its normal applications in plumbing and has made every effort to permit the tin necessary for wiping solder for this lead work, realizing that when lead is used, more critical materials are saved.

"However, tin itself is highly critical, even though lead is not, and we have been strongly in favor of the Lead Industries Association's efforts to encourage plumbers to use lead welding instead of solder wherever possible. We have noted considerable progress in the establishment of schools for this purpose. Now we hope that plumbers will apply this technique on as wide a scale as possible in actual installations in order that lead may continue to be used in plumbing to save critical materials and that as little tin as possible will be required for solder. On the plumbers' own efforts at saving tin in solder will depend to a large extent how long the War Production Board can allow the use of tin for the purpose.

"I, therefore, wish to urge the plumbing trade, both for patriotic reasons and for their own welfare, to use as little tin as possible in making lead plumbing installations. This can be accomplished by the use of lead welding wherever men are available who can do it and by using as little solder per joint and as few joints as necessary."

One indication of our industry's active and positive effort to conserve tin, formerly used in tin-lead combinations, is indicated by the accompanying photograph on this page. This illustrates a class in lead welding. Lead welding, in contrast to lead wiping, eliminates entirely, in instances when it is applicable, the use of tin-lead combinations.

Lead's Position

Washington, D. C., May 26.—The lead position in the nation has eased considerably since the first conservation orders were issued, the War Production Board revealed today. And, at the same time, the Board announced issuance of Limitation Order M-38, as amended. The purpose of the amended order is to make lead more readily available as a substitute for more critical materials.

A survey of the lead production, consumption and stockpile picture has shown that it is no longer necessary to restrict any of its essential uses. Thus, hereafter, only non-essential uses will be controlled by Order M-38, as amended. The order does away with the 90 per cent limitation which existed on all uses, and provides that only List A items be prohibited from any use whatever.

There are few changes in List A. They include partially:

1. To omit certain items under the heading "building supplies" in order to make the prohibitions on such supplies conform to the restrictions of the Army and Navy list and these two lists are now identical with respect to the use of lead in building supplies.

2. To specify the non-essential uses of foil which are prohibited, rather than refer to permitted uses under List B, since List B has been abolished.

Left: A Cleveland class studies method of lead welding; one of several such groups

2 Ideas on Water Systems

One--sell "Extension of Use" to aid food production and prepare for post-war sales Two--stress repair and maintenance.

THE Electric Water Systems Council has just issued a new booklet, "Timely Tips on Wartime Care and Maintenance (of) Electric Farm Pumps and Water Systems" for distribution by dealers to their customers.

The booklet is designed to accomplish two important jobs for contractor-dealers and for the users of electric water systems. One is to conserve manpower and tires for the dealer and, at the same time, to protect the owner's investment. To this end the booklet urges water systems users to call upon the dealer in case of mechanical troubles and when important repair jobs are needed. But also the booklet explains the basic operation of the system in simple terms so that the farmer himself can make the simplest repairs and adjustments and thus avoid—for the dealer—those trivial, no-profit calls which are wasteful of time and transportation.

Possibly more significant in the long view than those portions of the booklet dealing with repair and maintenance, however, is a section entitled "Extending the Usefulness of Your Electric Farm Water System." This portion is significant in view of the WPB announcement (appearing on next page) that production quotas of farm machinery will be doubled. This means that plumbing and heating contractors handling water system equipment will have a real opportunity to assist farmers in providing the food necessary to win the war and write the peace.

Addressing the farm user, the Council booklet states: "Perhaps you are one of the many farmers who had an electric water system installed some years ago with the primary object of supplying water for your house, and later having it piped to the other buildings and feed lots. Now is the time to discuss such an extension with your dealer or service man. Many farm water systems have a reserve capacity that is frequently not utilized but could be employed at a cost of only a few cents a day to increase production and save labor.

"Why not let water run for you everywhere you can—to the barns, to the hen house, to the hog pen, to the vegetable garden? Also have hydrants placed so as to protect your buildings against the greatest danger on the farm—fire.

Full-size illustration of the new Owner's Manual which has just been published by Electric Water Systems Council. Dealers will receive these from their distributors and, in turn, distribute them to customers

"If you let water do the running for you, you will conserve your time and energy, which today are more valuable to you and to your country than ever before. Put your electric water system on the same all-out basis of service that you demand of yourself.

"For a few cents a day, your present electric farm water system working at full capacity can be made to do many things for you to produce more food for Victory."

Extension of Use

The new Electric Water Systems' Owner's Manual contains numerous suggestions for extending the usefulness of the electric farm water system. This article will discuss these suggested uses and introduce others supplied by manufacturers of the equipment.

The first uses which should be mentioned at this time of material shortages are those having a direct relation to farm production. Following is check list of these uses:

Drinking—human, livestock, poultry.

Preparation of food—cooking and canning.

Sprinkling and irrigation.

Spraying.

Sterilizing, such as dairy utensils.

Flushing, such as dairy barns and plumbing fixtures.

Washing and scrubbing — dishes, clothes, floors, etc.

Other important uses are for fire protection, bathing, dust elimination and air conditioning. Additionally, water under pressure is used to supply water for such miscellaneous purposes as ornamental ponds, fountains, the weighting of tractor tires, etc.

C. F. Walters, The F. E. Myers & Bro. Co., Ashland, Ohio, summarizes the uses of running water on the farm as follows: "To increase and improve production, to save and divert labor, to protect health, to beautify and to improve living standards.

"We believe that in this war year, with the imminent prospect of a food shortage and increasing national dependence upon the production of the victory gardener, your publication can render a distinct contribution by focusing attention on the opportunity to insure a good vegetable crop or perhaps increase production as much as 50 per cent by promoting the use of the simple garden sprinkling system developed by the U. S. Department of Agriculture. In every suburban and rural community, there are many water systems owners who have their gardens near enough to the water system to be reached by a short extension of pipe or hose. Almost any automatic water system with an ordinary lawn sprinkler will enable the owner to do a first-class job of garden watering."

When the farm customer has been educated to the numerous added uses for running water, the time will come when the problem of sizing the new water system to his needs will be encountered. Two advantages of running water are shown below.

Water is needed by laying hens and by growing chicks. Eggs are about two-thirds water. The laying hen must drink freely, and 100 hens will drink from 6 to 8 gallons of water a day and more in warm weather.

Milk is more than 87 per cent water. Therefore, whether cows are on pasture or in the barn, free access to clean water at all times produces the best results. Water available in drinking cups at all times may increase production up to 20 per cent as compared to watering twice daily. Each producing cow requires 25 to 30 gallons of water daily; when barn flushing is included, approximately 50 gallons per cow per day should be used as a basis in sizing the system.

Washington, D. C. — Vastly greater sales of water systems are foreseen from new production quotas expected momentarily.

It is understood that farm machinery production soon will be authorized at 80 per cent of the average annual output in the 1940-41 base period. An unlimited production of repair parts already has been approved by WPB.

The new orders also will eliminate the "concentration of industry" provision which characterized Order L-170. Donald Nelson has already declared concentration to be a "dead pigeon," and the new regulations on water systems—it is believed—will permit the large manufacturers again to make water systems.

Early versions of L-170 curtailed farm machinery (of which water systems are a part) to less than 25 per cent of the base period. The last version set the figure at about 40 per cent. Thus, it is expected that the new quotas will double the highest ones previously set.

WASHINGTON

P-84 Revision

Washington, D. C. — Plumbing and Heating Division Director Wilber indicates that the revised version of P-84 probably will be issued soon.

In an interview, he indicated that "we hope to have the order issued by June 10 or very soon thereafter."

Mr. Wilber and his deputy, William Macdonald, revealed that numerous orders affecting the plumbing and heating industry are now being revised. Most of these may be issued during June. Some of them will facilitate production of items which have been curtailed by earlier, restrictive orders. It is indicated, for example, that a water heater order will be issued which will make possible production of this equipment. Manufacturers have had great difficulty in producing anything at all under many of the previous orders.

AA-5 for Repairs

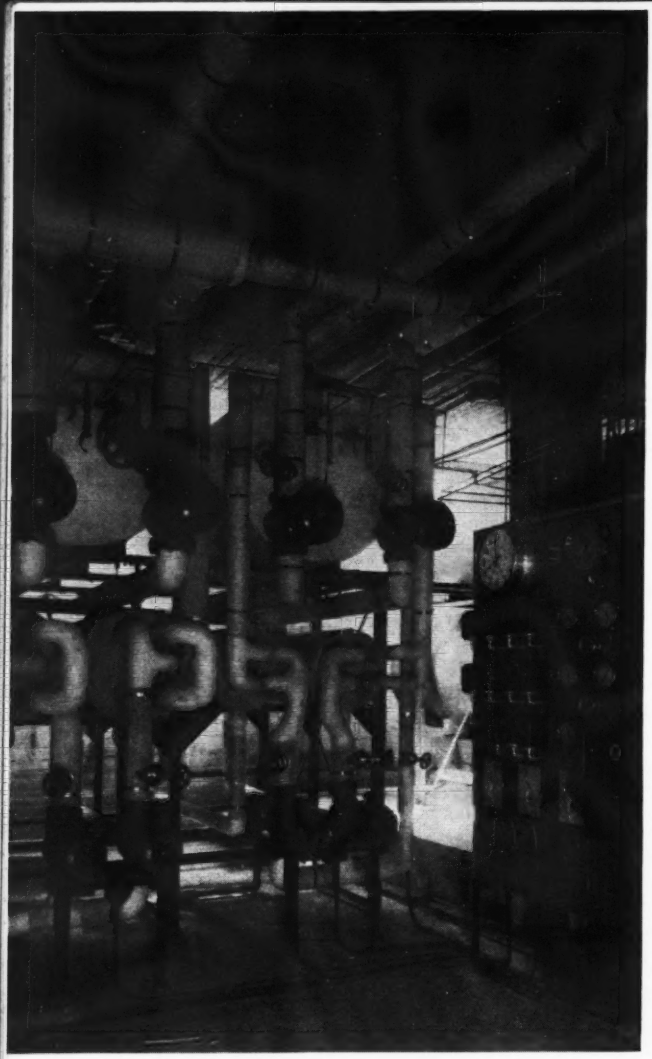
Washington, D. C., May 14.—The plumbing and heating contractor is given an AA-5 rating (or better) for all industrial and commercial maintenance and repair work under the revised CMP Regulation 5.

The AA-5 takes the place of the old A-10 which formerly was applicable to the maintenance and repair work for miscellaneous industries and businesses. AA-1 may be used by or for a long list of essential industries contained in Schedule I. AA-2 may be used by or for industries and businesses listed in Schedule II.

This new CMP 5 gives plumbing and heating contractors the right to initiate the AA-1, AA-2 and AA-5 ratings. This particular provision states: "Any person (such as a service repair shop) engaged in the business of doing maintenance and repair work for others may use the same allotment symbol and preference rating to obtain materials needed in the performance of the work which his customer would be entitled to use if the customer did the work himself. The cost of materials used in the performance of maintenance or repair work shall be treated as expenditures of the customer for the purpose of computing his quantity restrictions . . ."

Blr., Rad. Delivery

Washington, D. C., May 14. — The practice of cast iron boiler and radiator manufacturers of charging for delivery from the point of delivery to the job site was restored today by OPA.



Plumbing and Water Heating for Old Mexico

High altitude and lack of water posed several problems for contractors working on this military Hospital in Mexico

THAT Old Mexico is not bound by tradition nor held back by lack of technical knowledge is evidenced by the plumbing and air conditioning system recently installed in the new Military Hospital of Mexico City. After several years of thorough planning, this institution, one of the largest of its kind below the Rio Grande, has now been opened. It provides facilities for some thousand patients, has seven operating rooms, an auditorium, a morgue, regular kitchen and operating services and is equipped with every necessity to provide the ultimate in comfort and hygiene. An indication of the size and completeness of the facilities is shown by the 250 lavatories, 250 toilets and 150 showers, installed in the building.

Because the hospital is situated on San Isidro Heights on the outskirts of Mexico City and at a level above the city water pressure, it was necessary to install a pumping system operating from a deep well in order to circulate the domestic water, both hot and cold. The piping for the domestic water was divided into two circuits, one of 30 lb pressure to supply water to the kitchen, laundry, garage and all services in the basement and on the main floor. According to George F. Gilfrin, directing engineer of construction, more than 50 per cent of the total water used is chargeable to this lower section. The upper part of the six-story building is supplied with water at a pressure of 90 to 100 lb at the tanks. Pressure switches control the air pressure in these tanks.

Water is removed from the deep wells by a pump which discharges into a reservoir located some 20 ft above the suction of the pump. From this reservoir water is taken into the building through a 6 in. pipe. Three pumps are connected to the 30 lb system and three others to the 90 lb system; each of the six pumps has a capacity of 90 gal. The pumps on the 30 lb system discharge into a 4 in. line and the pumps on the high pressure system discharge into a 6 in. line. Each one of these lines, in turn, is connected to a group of four tanks (see photograph) which are set horizontally. Each of the eight tanks has a capacity of 800 gal with water level held at approximately ⅔ the depth of the tank; this level is maintained by special float controls.

Air pressure on the tanks is maintained about 5 lb higher than the water pressure thus permitting the air to enter as needed to maintain the constant level.

The domestic hot water system is supplied from these cold water storage tanks. The cold water enters twin indirect water heaters installed directly underneath hot water storage tanks—two heaters for each storage tank. Temperature of domestic water is regulated by thermostats which control 3 and 4 in. diaphragm valves, and is maintained at 160 F inasmuch as the

The picture at top of page shows water circulators, water heaters and storage tanks, and the control panel. See the text for complete description

high altitude prevents the 180 deg. temperature which is considered standard for purposes of sanitation; water boils at 180 deg in Mexico City.

Domestic hot water is kept in circulation, in the high pressure system, by circulators, one of which will operate continuously; a thermostat is placed in the line to start and stop the second circulator as demands grow alternately heavy and light. The low pressure circuit is also equipped with two circulators which operate in the same manner as those on the high pressure system. A thermostatic check valve is placed in the return line from each of the three wings that constitute the hospital in order to balance the return temperature and also to prevent short circuiting as much as possible.

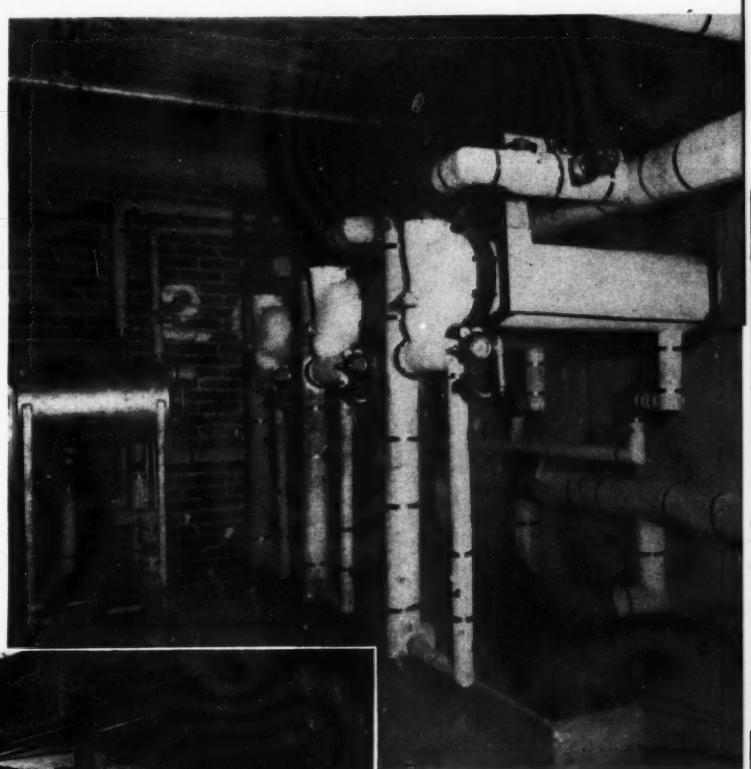
Steam is supplied to the heaters through a 6 in. line from two low pressure oil fired boilers rated at 18,200 sq ft edr. A considerable amount of compressed air is needed by the system and this is supplied by three 1-hp compressors operating at 125 to 150 lb. The high pressure water system receives this air reduced to 105 lb; it is reduced to 35 lb for the low pressure water system; to 20 lb for the air supply to the oil burners; and to 16 lb for the air conditioning system.

One of the interesting features of the installation is a danger signal lighting system on the control board. One of the switches, for instance, is connected to the high pressure water system in such a way that a bulb is lighted if the water pressure drops below 80 lb. A similar provision is made in the low pressure system only in this case the lamp is lighted when the pressure falls below 25 lb. A third switch lights a third signal lamp when the boiler pressure drops below 7 lb. Still another light shows when the air pressure for the control system drops below 15 lb; there is a signal light, too, for the high pressure air should it drop below 100 lb pressure. The mechanism which controls this latter light also sets off an alarm which can be shut off by an auxiliary switch but the light itself cannot be extinguished without disconnecting the whole control panel. This prevents the operator from merely cutting off the light without first correcting the trouble.

Switches for the circulators and a pressure gauge for the boilers are also located on the panel board as are pressure gauges for the air and water systems and remote reading thermometers which indicate the temperature of the domestic hot water in the tanks.

Heating of the building is accomplished through convectors and booster heaters, all of these being supplied with hot water from three heat exchange units which are thermostatically controlled. Ventilating air is circulated by three fans direct connected to 5 hp motors. There are 80 zones in the air conditioning system and 135,000 cfm of air are provided.

Each of the four main operating rooms is conditioned with an individual blower unit controlled by a combination thermostat and hygrostat which control two diaphragm valves. These are placed in the domestic water supply so that heat can be obtained when the main heating system is not required.



Photograph above shows a battery of heat exchangers installed in the hospital. Because of the altitude water boils at 180 degrees and the temperatures of heated water has to be kept below that point

The picture at left shows the domestic water tanks and the pumps which fill them from a reservoir located outside the building. The reservoir, in turn, is filled by deep well pumps

World's Largest Office Building . . . .

(Second Part)

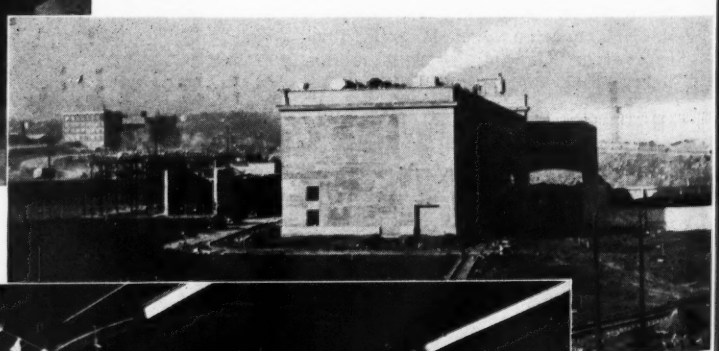
REMARKABLE not only for size and shape, but for its almost complete independence from outside utilities, the Pentagon, world's largest office building, is one of the few structures of its type in the world to have its own sewage disposal plant. Its central heating plant and distribution mains and refrigerating and air conditioning plant are huge, as might be expected, still the Pentagon's planning has not slighted details. The following article tells about the heating, plumbing, air conditioning and refrigeration equipment and installations.

Steam reaches the building at a pressure of 80-100 lb and is reduced to 25 lb for domestic hot water and for hot water heating, and to 10 lb for blast heaters. Steam is furnished to the kitchen at 40-45 lb. The condensate is returned by the condensate pumps to the de-aerating feed water heaters in the boiler plant.

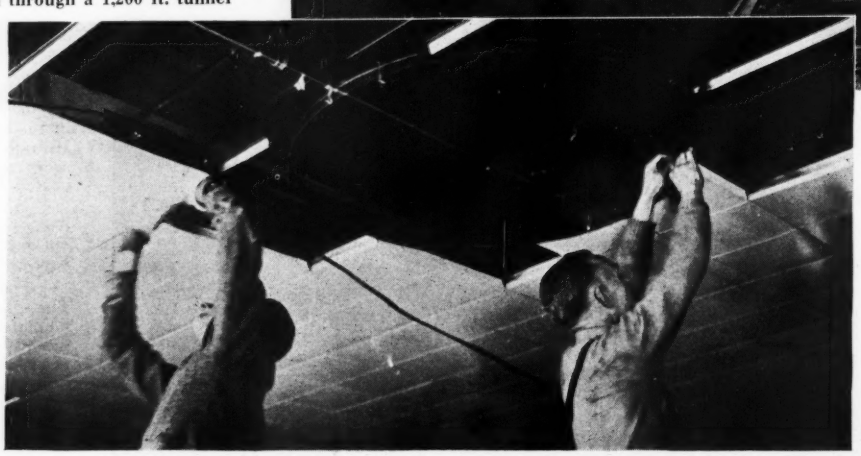
The expected peak load with diversity is 320,000 lb. The approximate connected load is as follows: hot water heating, 117,000 pounds; domestic hot water, 30,000 pounds; kitchens, 21,000 pounds; booster heaters, reheaters, preheaters at fans, unit heaters at doors, bus terminals, garage, physical conditioning and basement storage areas, 232,000 pounds. Certain of these areas are also heated by direct radiation through conventional column radiators.

The 200-foot west wing of the plant houses 12 centrifugal compressors of 1,100 tons capacity each with integral coolers and condensers each driven by

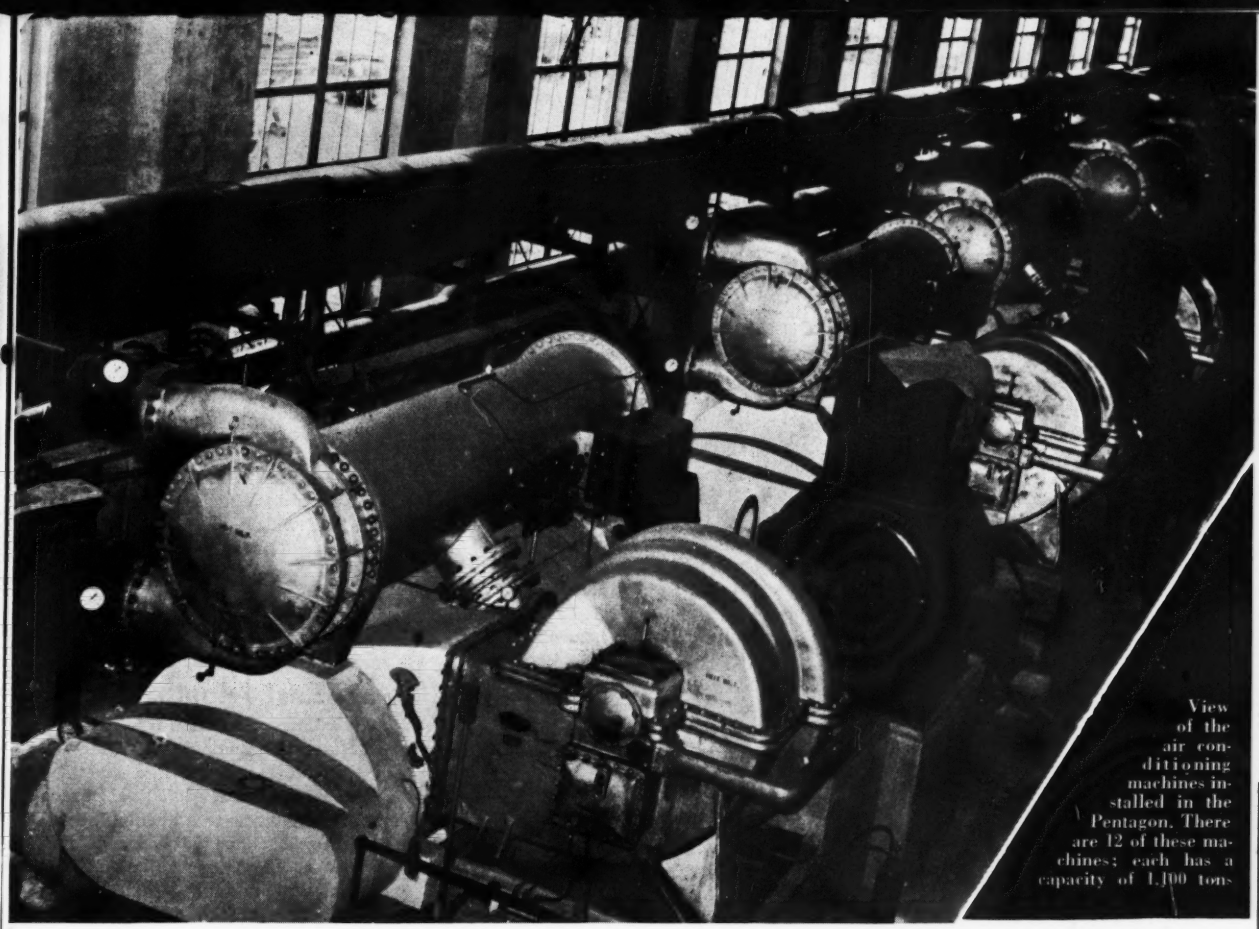
Air conditioning equipment is shown in the photo at the left. Each of the air conditioning machines is powered by a 1,000 hp synchronous motor operating at 4,000 rpm



The picture at the right is an exterior view of the heating and refrigerating plant; it is connected with the Pentagon through a 1,200 ft. tunnel



This photograph shows mechanics installing one of the ceiling diffusers which are part of the ventilating system. Miles of ductwork are installed in the Pentagon



View of the air conditioning machines installed in the Pentagon. There are 12 of these machines; each has a capacity of 1,100 tons

1,000 hp synchronous motors driven through speed increasing gears at 4,000 rpm. Water for the compressors is drawn from the nearby Potomac river lagoon through self-cleaning screens and chlorinators by five vertical type pumps each having a capacity of 10,300 gpm. Each pump is driven by a 300 hp motor.

The plant is equipped with four chilled water pumps each having a capacity of 7,600 gpm, driven by 500 hp motors. Removal of algae from the condensor water is assured by a time-control chlorinating unit using 1,500 lb of chlorine per day.

Water Treatment

All refrigerating equipment is operated at 2,400 volts. Power for all Pentagon operations is received at the power plant at 66,000 volts and is reduced to 13,000 volts through two 25,000 kva transformers, and distributed at this voltage; 13,800 volts is reduced to 2,400 volts through 4-5,000 kva transformers for air conditioning equipment. General light and power is obtained through 66-500 kva network type transformers reducing to 125/216 volts.

In the 1,200 foot tunnel connecting the Pentagon with its giant heating and refrigerating plant are two 36 in. chilled water lines; a 16-in. high pressure steam line and an 8 in. condensate return line; a 3 in. high pressure drip line; an 8 in. condenser water line serving drinking water condensers in the building, and a 2 in. high pressure air line.

Distribution of steam and chilled water piping within the building radiates from the main tunnel which circles the entire building under the innermost ring. Machine rooms under each of the five intersections contain the steam pressure reducing valves, two 500 gpm. circulating pumps and interchangers which heat water for the heating systems, condensate return pumps, two hot water generators of a total capacity of 22,500 gallons for sanitary use, drinking water cooling machinery and pumps, vacuum cleaning machinery and sump pumps. From these five machine rooms, sub-mains lead down radial tunnels under each of the ten radial corridors to feed risers to the various floors.

Steam Distribution

Some 500 fans, located largely in blower rooms on the fifth floor, handle approximately 4,500,000 cfm of supply air (equivalent to 10,000 tons per minute) plus the relief, booster and exhaust systems from toilets, vaults, kitchens and similar areas, for a total volume of 10,580,000 cfm of air moved.

In 90 spray and coil type dehumidifiers the chilled water from the power plant cools 4,063,000 cfm of air to 55 degrees. This, mixed at times with recirculated air, is distributed throughout the building by insulated sheet metal and prefabricated asbestos ducts.

At peak outdoor high or low temperatures, 63 per cent of the air is recirculated. A design temperature differential of 23 degrees allows for sun exposure, human occupancy and lighting loads.

Outside Controls

Outdoor controls govern the fan discharge temperatures to the 7,800 window units which are finned tubular hot water radiators inserted in the air flow ventilator ducts. In daylighted areas thermostatic valves at the hot water reheaters in the window units afford the final control to keep the room conditions at 78 degrees and 50 per cent humidity in summer, and at 75 degrees and 30 per cent humidity in winter. In interior zones recirculated air and booster heaters bring the 55 degree basic air to proper temperature.

This installment, the second of a series, completes the article on heating, ventilating and air conditioning installations in the Pentagon.—Ed.

Questions From Readers

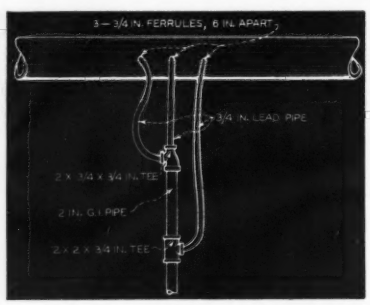
Water Service

To the Editor:

We would appreciate it if you would give your opinion of water main connections made as shown in the enclosed sketch. Thank you.

New Jersey — J. W. S.

The method of tapping a street main such as you show is quite common in cases where the service connection is relatively small compared to the size of the street main and the main already has been laid. The objectives in this type of connection are to avoid the cutting of the large main and the insertion of a tee and closing collar, as well as to limit the amount of drawoff which



This is the way Reader J. W. S. makes his connections to the water main.

can be made by any one consumer. We should like to see the ¾ in. tappings at least 12 in. apart to avoid weakening the main; this might occur with the tappings close together. You will note that the area of three ¾ in. branches is less than the 2 in. line which means that the water would come through the lead branches at a high velocity but at the same time would flow with a more moderate velocity in the 2 in. branch. This type of connection also provides for settlement of the branch without any danger of having the branch break off at the main.

• • •

Freezing Lines

To the Editor:

Will you kindly arrange to send me information or literature on the proper method of safely working on pipe joints when there is water in the line and it must be frozen. By safety I mean safety for both the mechanic doing the work and for the materials involved.

New York — H. K.

To the Reader:

The usual method of freezing water lines where no valves are available for shutting off the supply is to dig up a short section of the pipe and pack with ice and salt or dry ice. This results in freezing the water in the pipe after a short time just the same as ice cream is made in the old style ice cream freezer.

The time required to freeze a small water service usually is 30 to 45 minutes but it is necessary to shut off the flow of water through the branch while the freezing is taking place. This may be accomplished by closing the main supply valve into the building. Freezing is seldom applied to any lines outside of lead service pipes in which the lead has sufficient stretch to allow freezing without splitting the pipe.

In order to wipe or solder on the branch the line must be dry and you may have to drill a couple of small holes in the pipe to drain it out before attempting any lead work. These holes can be resoldered after the work is completed. If the operation takes a considerable time, the salt-and-ice packing may have to be renewed as soon as most of the ice is melted in the first packing.

• • •

Answer from April

The total pressure tending to blow the cap off the outlet is equal to the area within the cap, at right angles to the center line of the pipe, multiplied by the gauge pressure. This area depends upon how the cap is constructed. It will be assumed that the maximum area occurs at the exposed threads just beyond the end of the pipe.

The pitch diameter of the threads at the end of a 4 in. pipe is 4.33438 in. The depth of thread is 0.10 in. Therefore, the diameter over the thread at this point is:

$$4.334 + 0.10 = 4.434 \text{ in.}$$

The inside area of the cap at this point is:

$$\frac{3.1416\,(4.434)^2}{4} = 15.44 \text{ sq in.}$$

Therefore the total pressure on the cap tending to blow it off the outlet is: $15.44 \times 50 = 772$ lb.

There are 8 threads per inch on 4 in. pipe. Therefore there are $8 \times 1\frac{1}{4} = 10$ threads engaged in this case. The stress per thread therefore will be: $772/10 = 77.2$ lb.

Since the total taper on pipe threads is ¾ in. per ft, the average pitch diameter of the threads, when 1¼ in. of threads are engaged, will be:

$$4.3348 + \left(\frac{.75}{12}\right)\left(\frac{1.25}{2}\right) = 4.3348 + .0391 = 4.374 \text{ in.}$$

The circumference of the thread on the average pitch diameter is: $3.1416\,(4.374) = 13.74$ in.

Therefore the stress per linear inch of thread, based upon its length on the pitch line, will be:

$$\frac{77.2}{13.74} = 5.62 \text{ lb.}$$

Virginia — J. K. P.

• • •

From Last Month

The following question was presented, for Domestic Engineering readers to solve, in the May issue:

A pneumatic tank of 750 gal capacity must supply water to a building at pressures ranging from 25 lb gauge minimum to 40 lb gauge maximum. How much water could be drawn from the tank starting at the 40 lb maximum pressure before the tank pressure would be reduced down to the 25 lb minimum pressure (a) If no initial air pressure is used? (b) If 25 lb initial air pressure has been used before the tank was filled with water?

Here's the answer:

May's Answer

In order to ascertain the answer for (a), the number of cubic feet in the tank must be computed by dividing the contents in gallons by 7.5 since there are 7½ gallons to a cubic foot. This gives

750 gal ÷ 7.5 or 100 cu ft

of volume in the tank. The tank (before starting to pump in water) is full of air at normal atmospheric pressure and it is the compression of this air as the water is pumped in which produces the pressure in the tank. The pressure of the air is 14.7 lb absolute at atmospheric pressure and the air will occupy a volume inversely proportional to the absolute pressure. That is to say, if the absolute pressure is doubled, the volume of the air will be half as much and if the absolute pressure is tripled, the volume of the air will be ⅓ as much. The absolute pressure before water is pumped into the tank for the air within the tank is 14.7 lb as previously noted. After the tank has reached 25 lb gauge pressure, the pressure on the air is

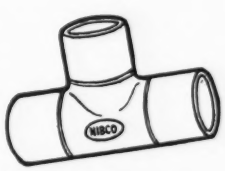
OUT OF THE CRUCIBLE OF *War...*

COME NEW IDEAS FOR *Tomorrow!*

UNDER THE stimulus of War American industry is evolving more new ideas, new processes and new materials than was even thought possible twelve months ago. Through new adaptations of our equipment and processes we are today turning out many types and sizes of multiple valves and special fittings for the Armed Forces far different from anything we ever did before. Some of them are so large and so complicated that it seems truly an engineering miracle that they should come out of the same foundry and off the same production lines that formerly produced only small parts, like solder fittings.

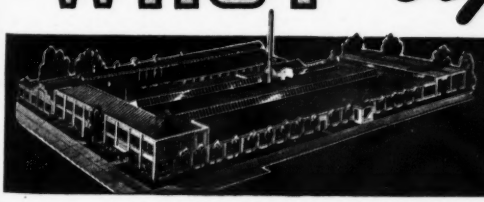
When "Tomorrow" comes, we will be ready for the tremendous wave of building that is sure to come . . . ready with new products, new methods and finer quality than ever before. From the labor pains of War with all its horrors a bright new world will be born for us all.

While our production facilities are completely at war work, we may be able to furnish NIBCO Wrot Fittings on priorities from stock. We will be glad to discuss your needs and problems with you and help you if we can.



NIBCO

WROT *Copper Fittings*



NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA
VALVES AND FITTINGS SINCE 1904

Questions From Readers

14.7 lb plus 25 lb or 39.7 lb

and the volume of the air under this pressure will be

14.7 lb ÷ 39.7 lb or about 36 per cent of its original volume.

When the air is compressed sufficiently that the pressure in the tank reaches 40 lb the absolute pressure of the air is

14.7 lb plus 40 lb or 54.7 lb absolute

and the volume of the air will be

4.7 lb ÷ 54.7 lb or about 27 per cent.

In each case the water occupies all of the space not occupied by the air so that at 25 lb pressure the amount of water in the tank will be

100 per cent—36 per cent or 64 per cent

while with 40 lb pressure the amount of water will be

100 per cent—27 per cent or 73 per cent

and the amount of water which can be drawn out of the tank between these two pressures will be

73 per cent—64 per cent or 9 per cent.

Since the tank contains a capacity of 750 gal the number of gallons which could be drawn out would be

750 gal × 9 per cent or 67.5 gal.

Where initial air is used, as in (b), the pressure on the air at 40 lb in the tank will result in the air having an absolute pressure of 54.7 lb and the 25 lb initial air will have an absolute pressure of 39.7 lb both of which previously have been computed. Then the volume of the air at 54.7 lb absolute compared to the volume of the air at 39.7 lb absolute will be

39.7/54.7 or about 72.6 per cent as much.

Consequently the air at 40 lb will occupy 72.6 per cent of the tank and the water will occupy

100 per cent—72.6 per cent or 27.4 per cent

of the tank volume. The number of gallons is represented by

750 gal × 27.4 per cent or 255.5 gal

and, as the pressure will not drop to 25 lb gauge until all of the water is drawn out of the tank, this is the amount which may be drawn out between the 40 lb gauge and the 25 lb gauge pressures.

All of this is based on the air temperature remaining the same, or on isothermal expansion.

Kentucky. J. B. G.

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Can You Answer This?

The following question is published in order that readers may submit their solutions. For the most complete and accurate answer, which will be published, Domestic Engineering will pay $5.00. Address your answers to The Editor, Domestic Engineering, 1900 Prairie Ave., Chicago.

A steel septic tank, 3 ft in diameter by 5 ft deep, is set vertically in the ground so as to have a coverage of 3 ft over the top. Before the tank is placed in service, and while it is yet empty, a heavy rain occurs which raises the level of the ground water to within 4 ft of the ground surface. If the tank weighs 600 lb, what is the upward push of the tank and will it push up sufficiently to raise both itself and the fill above the top of the tank if the fill weighs 125 lb per cu ft?

● ● ●

Joints and Water

To the Editor:

Will you please advise me the proper way to pour lead joints on water mains where water is encountered, as in the case of leaky valves?

Missouri J. L. M.

To the Reader:

The pouring of joints under such conditions always is accompanied with some danger as the hot lead encountering any small amount of water will cause the water to expand and will throw the lead in all directions. Exactly how your difficulty can be overcome depends somewhat on the conditions that you have to meet. It may be necessary to drill and tap a ¾ in. drip connection on the bottom of the pipe and leave this open while the joint is being caulked and until the lead is poured. Afterwards this drip tapping will have to be plugged. The difficulty lies in the fact that in a large pipe the ¾ in. tapping might allow a small amount of water to pass by without catching it. The insertion of a thin rubber bag with a small rubber hose connection so that the bag could be blown up and entirely fill the pipe would serve to prevent a small amount of dripping from passing the bag for some time.

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Steel Fittings

Washington, D. C., May 8—The number of types of steel pipe fittings is reduced from 38,784 to 3,615 by Limitation Order L-278 issued today by WPB and to be administered by the Shipbuilding Division. Iron and brass pipe fittings were previously simplified by L-288, so that the new order rounds out the overall program simplifying pipe fittings production.

Pipe fittings to be produced under the order are used in almost every segment of basic industry. The order does not cover the following types: (1) those for use on airplanes and ships, other than pleasure craft, (2) conductors of corrosive liquids or gases, (3) those specially designed for combat use, (4) those used to replace special type fittings, and (5) those enumerated in a list of special types.

The types permitted comprise about 98 per cent of all produced. In effect, therefore, the order eliminates many special jobs which interrupt the "straight line" production methods basic to the industry. Resultant increased production is expected to reduce backlog by about 10 per cent.

It is estimated that the simplification will save about 3,500 tons of alloy steel, 175 tons of chromium and 17.5 tons of molybdenum.

Changes in specifications of materials and of pressure classes correspond closely with those of Order L-252 covering valves and valve parts.

● ● ●

A. C. Units

Washington, D. C., May 25.— More than fifty firms have responded to the Government's appeal for heavy air conditioning units needed for the control of temperatures in essential war plants. Already, 22 such units, representing a total capacity of about 38,000 horsepower, have been moved to plants producing high octane gasoline, synthetic rubber and airplane engines, the War Production Board reported today. Difficult engineering problems which arose in connection with the removal of the equipment from its original locations have been overcome.

One large airplane plant requiring about 9,000 tons of refrigerating capacity will go into operation July 1 with 68 per cent of volunteered air conditioning equipment and 32 per cent new equipment. Units made by five different manufacturing companies are included in the installation.

"Controlled temperature is essential in the production of high octane gasoline, synthetic rubber and parts with very fine tolerances which will be assembled later," the WPB stated.

"The program was started late last year to save the critical material and man-hours which would have been required to manufacture new equipment. If your favorite department store seems warm this summer, don't complain. Its air conditioning is doing a bigger job somewhere else."

What's Behind the Trade Mark?

QUALITY
TRADE MARK
YOUNGSTOWN
SERVICE

Faith in the Future

The Youngstown Sheet and Tube Company was founded in November, 1900 by 47 local investors, with an authorized capitalization of $600,000. In December, 1901, this capitalization had been increased to $4,000,000 to provide for the expanded program decided upon by the men of vision who planned the future of this company.

In February, 1902, 14 months after the initial meeting of the shareholders of this company, the first product carrying the Youngstown trademark was produced. In this same year, these pioneers took the first step to assure complete integration . . . the first producing blast furnace was purchased... the first ore properties were acquired... and the first coal lands obtained. These early acquisitions all served as a nucleus around which was created the great industrial organization, which in later years served mankind in every corner of the globe where products of civilization were making life more complete.

We are doubly appreciative of the efforts of those who preceded us at Youngstown. These men of faith, courage, foresight and action have bequeathed to us those things with which we can make a definite contribution in helping to win freedom for the world today, and upon which we can help build an assured prosperity for the future.

Pipe and Tubular Products - Sheets
Plates - Conduit - Bars - Tin Plate
Rods - Wire - Nails - Tie Plates and
Spikes - Alloy and Yoloy Steels

The YOUNGSTOWN
SHEET AND TUBE COMPANY, Youngstown, Ohio
Manufacturers of
CARBON · ALLOY AND YOLOY STEELS

Heating, Ventilating and Air Conditioning a Hotel ..

(Contractors: C. H. Cronin Co.; Mehring & Hanson)

This second of two articles on the Washington, D. C., Statler Hotel describes in detail the heating, ventilating and air conditioning equipment installed. The first of these articles appeared in the May issue of Domestic Engineering.

IN planning its Washington plant, the Statler management recognized that the comfort of its employees has an important bearing on the service rendered hotel guests. While many of the employees will share with guests the comfort of public spaces, corridors and guest rooms, special provision has been made for those working behind the scenes.

Air conditioning has been provided in the employees' dining room, stewards' and housekeepers' sections, and in the basement offices of the building superintendent and laundry superintendent, as well as in locker rooms and rest rooms used by employees who normally work in air-conditioned spaces. All other service areas are heated and ventilated by direct circulating and exhaust fans.

Of the 29 supply fans delivering a total of 340,700 cfm, 13 fans deliver 115,450 cfm to public spaces; seven deliver 66,150 cfm to guest corridors and guest rooms, and nine deliver 159,100 cfm to kitchens, laundry, boiler room and other basement service rooms.

Five recirculating fans with a capacity of 33,000 cfm serve dining rooms, lobby and other public spaces, where 8 straight exhaust fans totaling 51,900 cfm capacity supplement the re-circulating units. Of the total of 18 straight exhaust fans, having a combined capacity of 214,400 cfm, eight serve public spaces; six exhaust 162,500 cfm from kitchens, general basement, laundry and engine rooms, and four fans assigned to toilet exhaust are rated at 80,500 cfm.

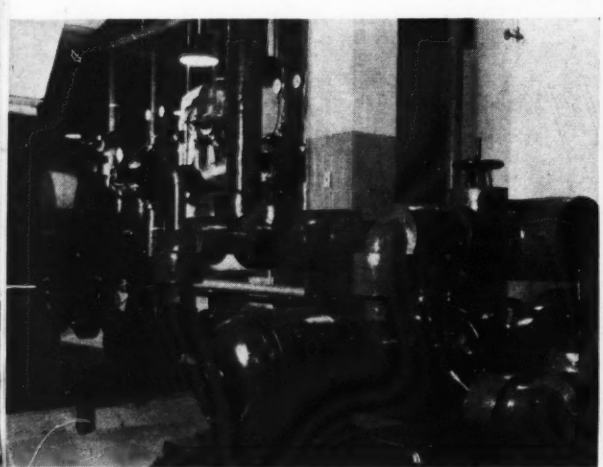
Design details and execution of the intricate system planned to neutralize Washington's baffling weather represent the joint efforts of the engineering department of the Hotels Statler Company, the Carrier Engineering Corporation, Holabird and Root, architects; John W. Harris Associates, general contractors; Mehring and Hanson, heating, ventilation and air conditioning contractor; C. H. Cronin Co., plumbing contractor, and H. P. Foley, electrical contractor.

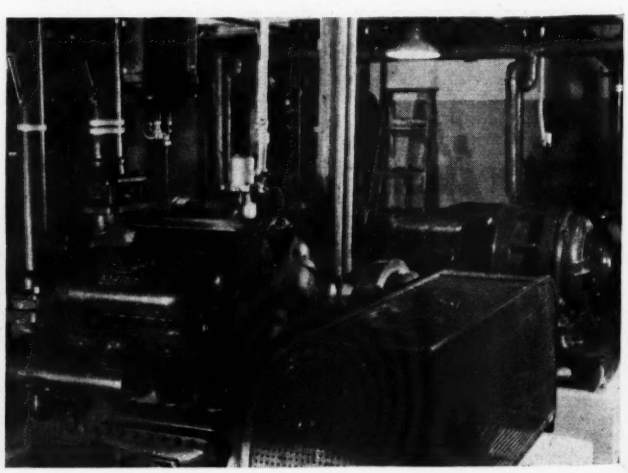
As explained by E. P. Podmayer, chief engineer and building superintendent, behind-the-scenes phases of the Statler heating, ventilating and air conditioning system include numerous novel features, some of them being introduced to hotel operation for the first time.

The heart of the heating system consists of three 3-drum, bent-tube boilers, two of 350 hp capacity with a 200 per cent overload rating, and one of 300 hp with a 250 per cent overload rating. In compliance with OPA fuel-saving requirements, one of the larger boilers has been converted to coal firing by installation of a stoker.

The other two boilers are oil burning

Photograph at left below shows, in the foreground, the house water pumps and in the background the water softeners. Picture at the right shows a corner of the refrigerating machine room where four refrigerating units serve the hotel's 45 boxes, both high and low temperature units





103,000,000 pounds of steam, 14,000,000 cu ft of water are annual consumption figures for the Statler Hotel's Washington, D. C., unit. Air conditioning for all dining rooms and individually regulated room temperatures help defeat the vagaries of weather and shifting loads. Combustion control here, too

types. One is used as a standby and the other to relieve the primary boiler in the event of heavy loads. Because of the emergency conversion to solid fuel and the scarcity of critical materials, coal handling at the new Statler is not on a par with the balance of the heating system. For-the-duration equipment is being developed, however, by the hotel engineering staff under the direction of Mr. Podmayer.

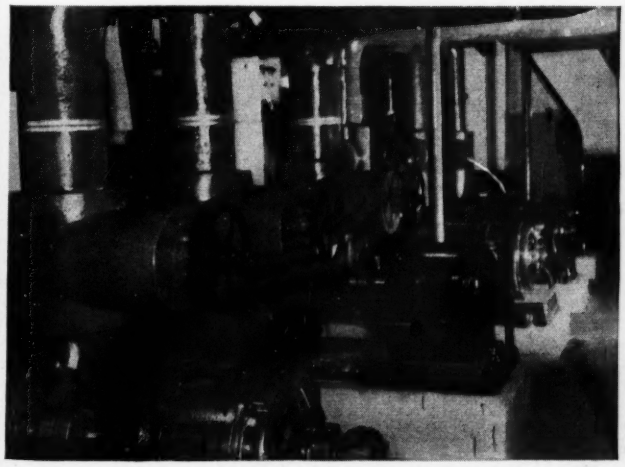
All boilers are under full automatic combustion control, equipment including CO_2 and flue gas recorders for efficient operation. Smoke control signals, and flame eye control that signals firemen by sounding klaxon horns in case burners are extinguished are also installed.

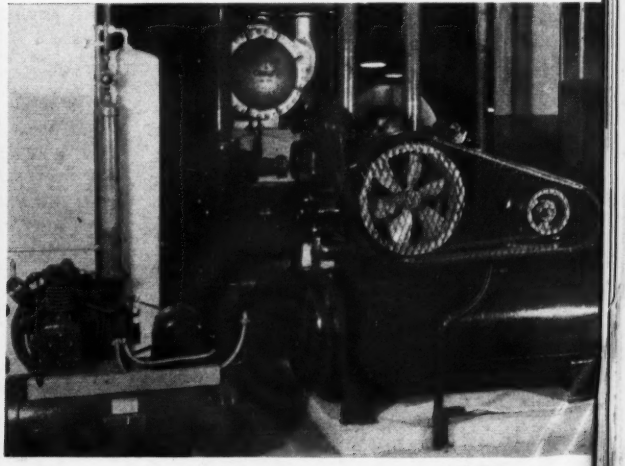
Steam is generated at 125 lb and distributed to the main steam header, which distributes to the laundry at 100 lb pressure through reducing valves; at 40 lb for heat exchangers to the hot water heating system; 25 lb for kitchen operation, and 5 lb for the main hot water system.

All condensate returns from the heating system are taken back by two steam-driven vacuum pumps and discharged to a boiler feed water heater.

	Supply Fans			Exhaust Fans		Recirculating Fans	
		A-C Load	Motor		Motor		Motor
Area Served	cfm	(tons)	hp	cfm	hp	cfm	hp
Presidential Ballroom, Foyer	23,500	145	12.4	9,600	2.3	12,000	2.8
Congressional Room	10,700	43	10.6	3,500	.8	4,400	1.1
Federal Room	5,300	16.5	3.0	1,400	.4	....	..
2nd Fl. Private Dining Rooms	11,800	39.0	5.7	3,300	.8	4,300	1.1
1st and 2nd Floor Lobbies	21,800	74.0	..	8,400	2.2	9,700	2.4
Embassy Room and Lounge	14,650	50.0	7.6	4,800	1.2	2,600	.8
Colony Dining Room	3,200	7.0	2.0	....	..	....	..
Club Bar, Barber Shop, Drug Store	5,000	17.0	3.0	3,400	.8	....	..
Coffee Shop	4,700	16.0	3.0	....	..	....	..
Ground Floor Stores	4,100	15.0	3.0	....	..	....	..
Steward, Includ. Food Control	1,700	12.0	2.0	....	..	....	..
Employees' Dining Room	1,700	12.0	3.0	....	..	....	..
Housekeeping Section	1,700	12.0	1.0	....	..	....	..
Decorative Glass Fronts (3 units)	8,900	13.0	3.5	....	..	....	..
Guest Floor Corridors	17,500	62.0	4.29	....	..	....	..
Guest Room Coolers (two zones)							
Zone 1; 3 blowers	22,800	76.0	40.1	....	..	....	..
Zone 2; 3 blowers	23,850	146.0	46.3	....	..	....	..
Basement	39,000	..	17.3	17,300	4.0	....	..
General Basement	26,000	..	9.8	10,500	2.7	....	..
Laundry	43,000	..	18.4	30,000	8.1	....	..
First Floor Kitchen	16,000	..	4.0	33,000	9.4	....	..
1st & 2nd Floor Kitchens	15,000	..	4.0	(two units) (served by above)		....	..
Second Floor Kitchen	15,000	..	4.0	13,000	3.5	....	..
Toilet Exhausts (two units)	....	..	..	33,000	10.0	....	..
Toilet Exhaust	....	..	..	29,000	8.0	....	..
Toilet Exhaust and General Basement	....	..	..	8,500	1.9	....	..

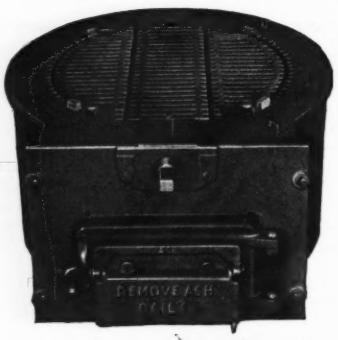
The chilled water pumps for public spaces, and the main circulating water pumps are shown in photo at left, below. Pneumatic controls for use with heating and ventilating equipment are supplied by three compressors shown in photo at right. Larger unit also serves general maintenance equipment





Now-CONVERSION!

They're ripe for it — many of these customers who have just emerged from a winter in oil-rationed homes, fussing with fireplaces, going to bed at eight o'clock to keep warm, worrying about oil deliveries as tank gages neared the zero mark. You'll find a responsive audience — NOW — for a conversion proposition.



Some of these yearners after home comfort may be under the impression that conversion is as involved as an appendix operation. Give them the facts — on Fitzgibbons steel boilers it's simply a matter of jacking up the boiler, sliding the old base out, sliding the new base in, releasing the jack. Something like changing a tire.

NOW — before they've forgotten what winter is like — line up these conversion customers.

This is a Fitzgibbons Conversion Grate. Built of extra heavy material, designed correctly for coal burning, guaranteed to *fit*. Ready now, on order.

There is a bulletin telling exactly how to convert any Fitzgibbons oil burning steel boiler to coal hand firing. Write for your copy.

Fitzgibbons Boiler Company, Inc.

101 PARK AVENUE, NEW YORK, N. Y. WORKS: OSWEGO, N. Y.

OFFICES IN PRINCIPAL CITIES

BUY U. S. WAR BONDS and STAMPS

Use only

FITZGIBBONS

CONVERSION GRATES FOR FITZGIBBONS BOILERS

AUTOMATIC HEAT and AIR CONDITIONING Section

Heating the "Biggest" Bomber Plant

See Page 78

This is a photograph of the interior of the boiler room which supplies heat and steam and hot water to the world's largest bomber plant—the Willow Run Plant. The entire project is another indication of the responsibility in the war which our industry has accepted

July 15th

IS THE IMPORTANT DATE!

Effective July 15, 1943, Ladish Forged Steel Flanges will be sold through our own sales and distributing organization.

LADISH symbolizes over 41 years of service to industry and, as AMERICA'S LARGEST PRODUCER OF FORGED STEEL FLANGES, will continue to manufacture metallurgically controlled, uniform quality forgings unexcelled in the drop forge field.

ARMY E NAVY

FITTINGS DIVISION

LADISH DROP FORGE CO.

CUDAHY [MILWAUKEE SUBURB] . . . WISCONSIN

L

TO MARK PROGRESS

PLANNING

THROUGH WAR YEARS AND PEACE

for

Better Living

TODAY and tomorrow meet in America's industrial laboratories. Today's Victory—tomorrow's better living—are both taking definite shape.

Rolling equipment that stands up under temperature extremes from Russia's Arctic cold to Africa's inferno is contributing to your automobile of tomorrow.

Preserving foodstuffs in sweltering jungles and on blazing desert is proving new methods whose benefits are headed straight into American homes.

Near-miracles in surgery, sensational new drugs, are writing glorious victories over suffering and disease into a bright new chapter of a book that will never end.

Oil-O-Matic, too, is on the job for Victory today—for better living tomorrow. Even finer, even more efficient, even more versatile Williams Oil-O-Matic products are in the making—backed by more than twenty years of pre-war experience, plus war's know-how.

BUY WAR SAVINGS STAMPS & BONDS

ARMY E NAVY

Oil-O-Matic proudly flies the Army-Navy "E" pennant. Banner of Victory today! Symbol of the experience and know-how that will mark Oil-O-Matic's contribution to better living tomorrow!

THE BONDS YOU BUY TODAY ARE YOUR GUARANTEE OF A Better Tomorrow!

WILLIAMS OIL-O-MATIC HEATING CORPORATION

BLOOMINGTON, ILLINOIS

HEATING *the World's* INCUBATOR

THIS country, long accustomed to hearing the phrase ". . . the world's largest," nevertheless likes to recite the proportions of some of our huge war plants. Due, in a certain degree, to eminence already attained by the Ford Motor Company, the Ford Bomber Plant at Willow Run has become a gauge by which other war industries are measured. Or maybe it is simply because Willow Run was the first of the really mammoth factories built solely to win the war. No matter how it came about, nearly all war plants are now compared in size to this one: if it's "half as big as Willow Run," it is really something to talk about.

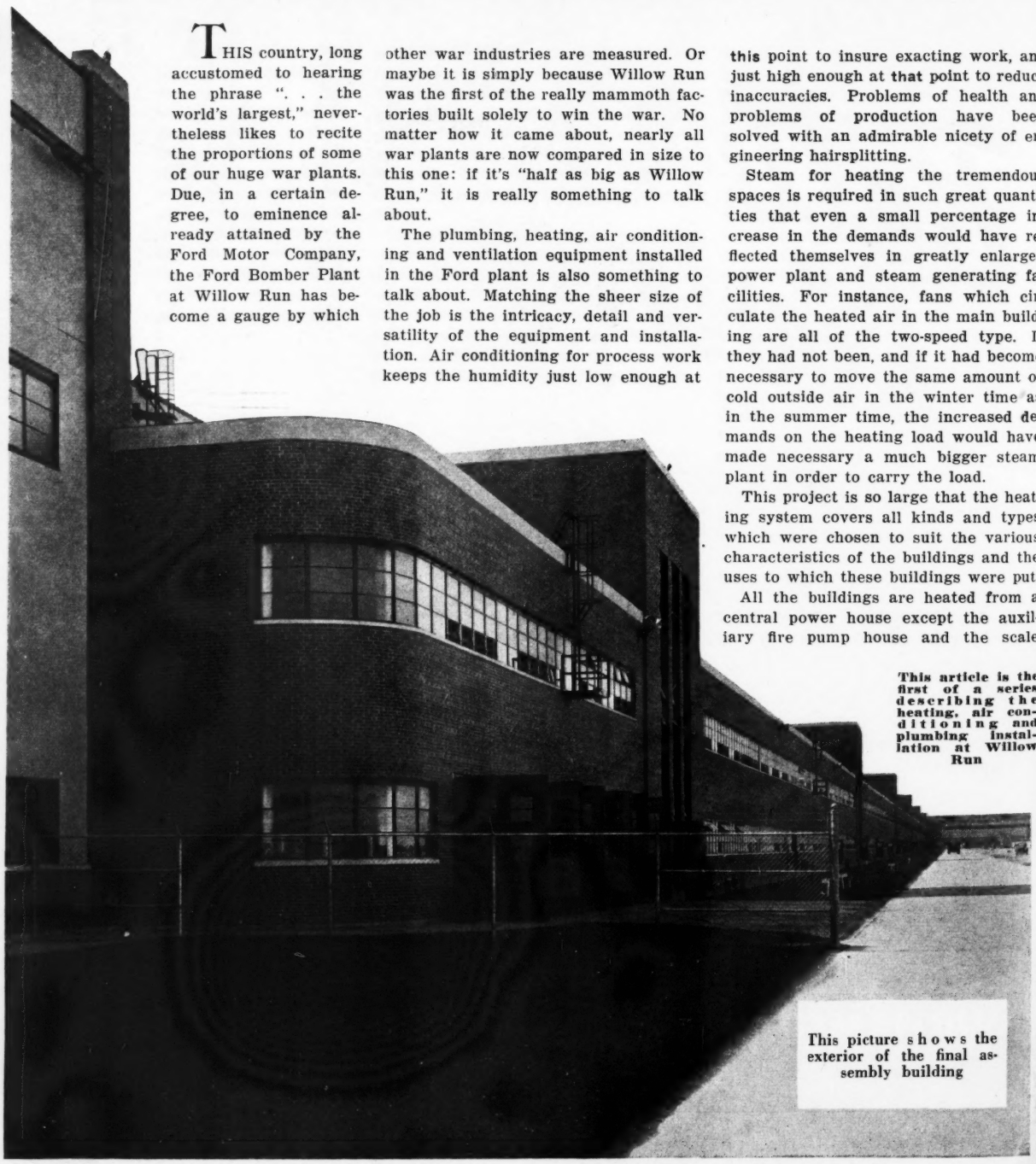
The plumbing, heating, air conditioning and ventilation equipment installed in the Ford plant is also something to talk about. Matching the sheer size of the job is the intricacy, detail and versatility of the equipment and installation. Air conditioning for process work keeps the humidity just low enough at this point to insure exacting work, and just high enough at that point to reduce inaccuracies. Problems of health and problems of production have been solved with an admirable nicety of engineering hairsplitting.

Steam for heating the tremendous spaces is required in such great quantities that even a small percentage increase in the demands would have reflected themselves in greatly enlarged power plant and steam generating facilities. For instance, fans which circulate the heated air in the main building are all of the two-speed type. If they had not been, and if it had become necessary to move the same amount of cold outside air in the winter time as in the summer time, the increased demands on the heating load would have made necessary a much bigger steam plant in order to carry the load.

This project is so large that the heating system covers all kinds and types which were chosen to suit the various characteristics of the buildings and the uses to which these buildings were put.

All the buildings are heated from a central power house except the auxiliary fire pump house and the scale

This article is the first of a series describing the heating, air conditioning and plumbing installation at Willow Run



This picture shows the exterior of the final assembly building

...Largest.....

FOR BOMBERS

house which have their own individual heating systems, including furnaces, fans, etc.

The boilers in the main power house are operated at 175 lb pressure which is used to drive the engines, compressors, and other equipment in the power house. A high pressure main is run through the main tunnel to serve some of the equipment, and also is cross connected with the heating system to build up the pressure at the end of heating system mains in the tunnel.

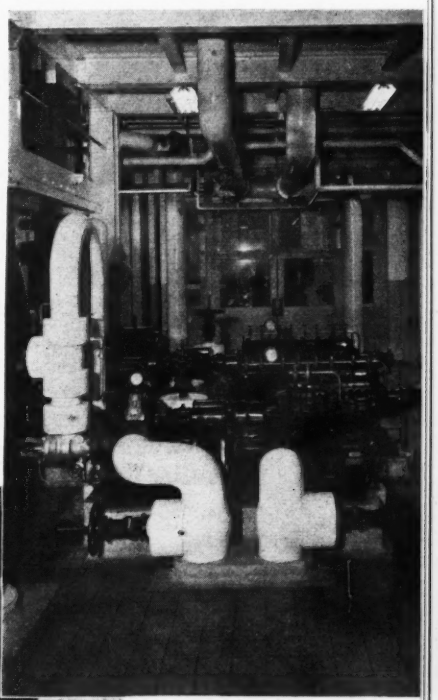
The steam main in the tunnels which supply the various heating systems is a 20 in. pipe and is designed to carry 200,000 lb of steam at 50 lb pressure, which is the back pressure of the equipment in the power house. The high pressure steam line in the tunnel from the power house is a 12 in. pipe and runs the entire length of the main building.

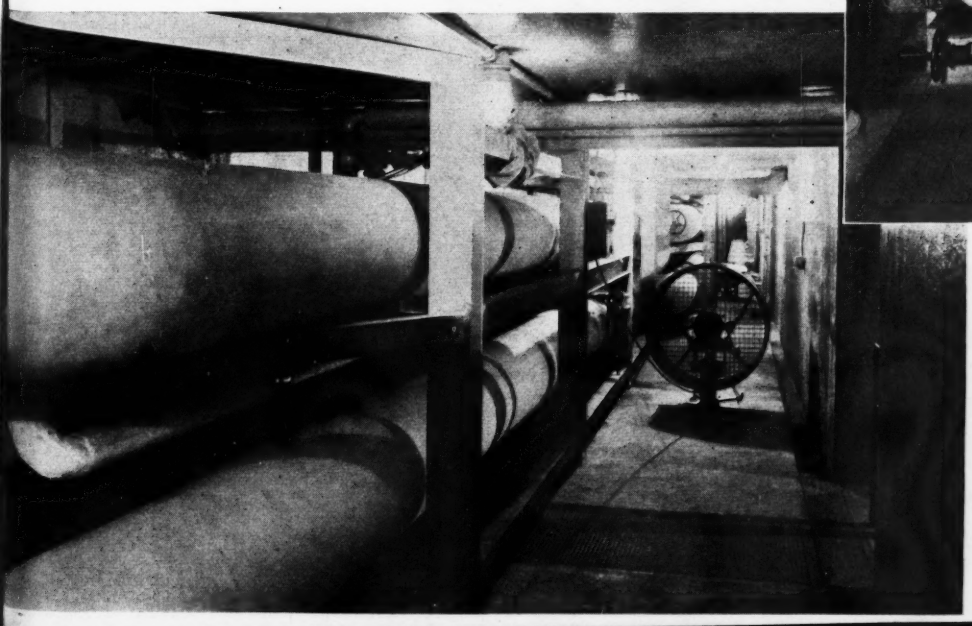
The pipe tunnel, 5,000 ft long, runs from the power house directly across the building from the south to the north side, and there is a branch which runs the full length of the building approximately in the center. This tunnel is also extended over to the training school, the office building and the hangar building to carry all the various services required by them. From it there are 4 ft square pockets or wings about every 200 ft for the purpose of getting the branch pipe services to the buildings to supply the various heating systems.

All the condensate returns from the various systems, process equipment, etc. run to pump and receiver units located in pump rooms spotted at strategic points in the main building as well as in the various small buildings around the main building. All condensate pumps discharge to a common header in the tunnel which, in turn, discharges into a large receiver in the power house about 75 ft above the first floor level. The heads of the pumps vary from 175 to 200 ft depending on their location in relation to the power house. Incidentally, these units are all duplex units, and are turbine type.

There are sixteen pump rooms in the main building, two in the hangar and one set in each of the other buildings. There is a total of approximately 15 buildings in the group which make up the entire plant to be heated.

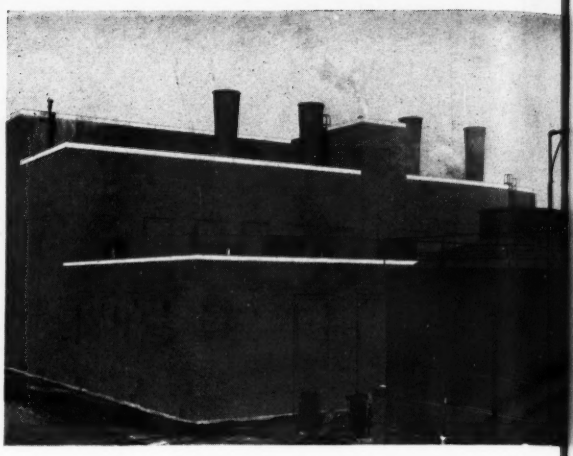
The main building is largely one story





Photograph above shows boiler feed pumps installed in the steam generating plant. Picture at left is one view of the pipe tunnels which carry steam to the various buildings from the boiler plant. Fans are required to remove collected heat from the tunnels

Another of the "biggest" of our industry's wartime jobs. Miles of piping, thousands of pieces of equipment and millions of man-hours went into this heating and plumbing installation

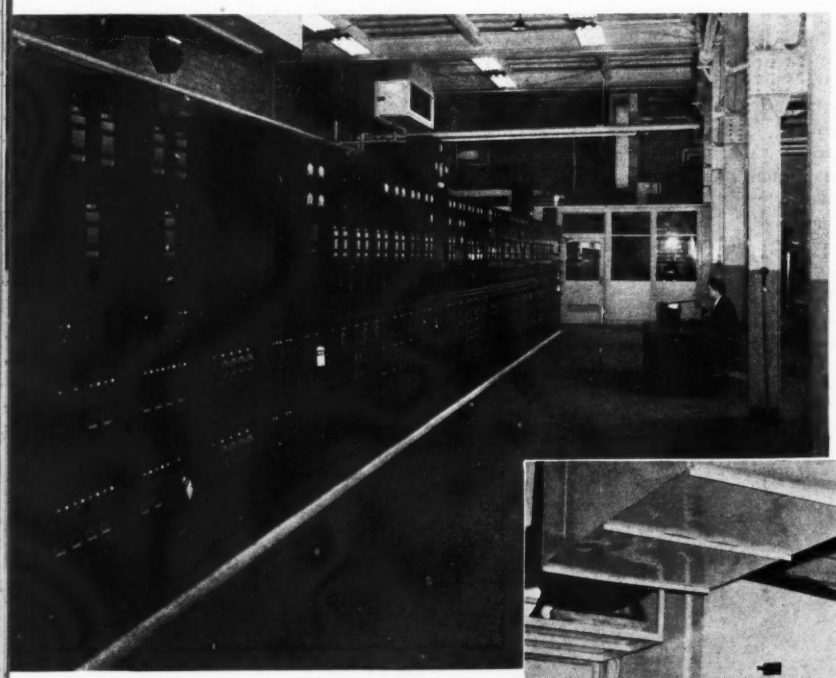


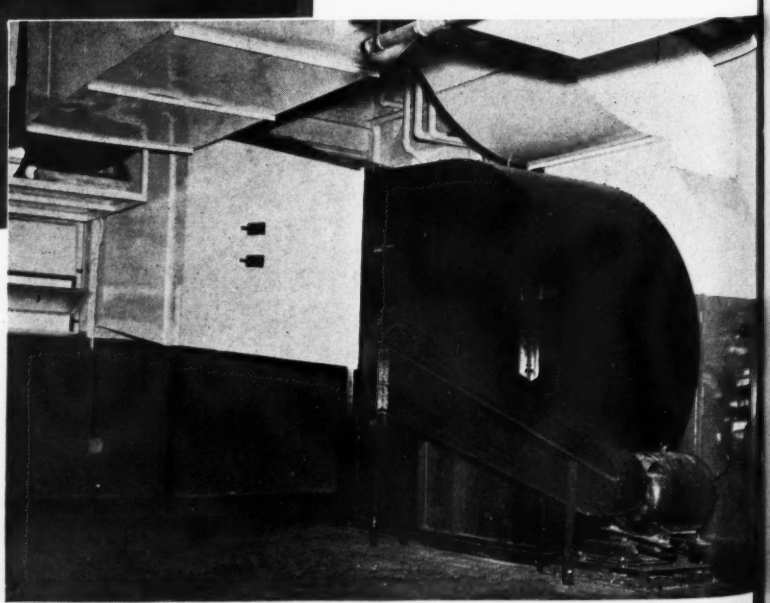
construction with long mezzanines running practically the length of the building. Office and engineering sections extend the entire length of the west end of the building—approximately 1,200 ft. This section also houses the hospital ward, doctor's offices, operating rooms, ambulances, etc.

After much deliberation and study of the various types of heating systems it was decided to use a hot blast system in the factory and a combined hot blast system and radiators in the engineering section. Due to the fact that the main building is broken up considerably by mezzanines the system had to be split up into approximately 69 main fan rooms which were located either above the roof or on the second mezzanine. These fans handle anywhere from 35,000 to 100,000 cfm depending on the area covered. These units all have two speed motors.

These fans are also used in the summer time to bring large quantities of fresh air into the building and create air movement for comfort. The stale air is removed from the building by process ventilation and also by some 286 roof ventilator fans of 10,000 cfm capacity each. The system creates quite an air movement throughout the building and is equivalent to approximately 4 air changes per hour for the entire height of the building or 10 changes at the 12 ft height of the working zone.

The hot air is distributed throughout the building through a system of duct work located in the truss space. These ducts fan out in all directions with outlets spaced at regular intervals to properly distribute the air to the working area. Where the mezzanines occur there are branch ducts which drop down at the columns to distribute the air to the lower levels as evenly as possible.





Photograph at top of page shows an exterior of the boiler house. There are four oil-fired boilers installed which provide steam for heating all buildings in the Willow Run plant

Picture directly above shows the boiler control panel in the boiler room. Approximately 6,000,000 cfm of air is provided for the main building heating. This not only maintains uniform temperature but allows the air to be cleaned

At the right: one of the 700 fans installed in the Willow Run plant. The hot air is distributed throughout the building by means of ducts which are located in the building's truss areas. All fan motors are two speed

GATE VALVE No. 602—For same service as No. 600. The single wedge disc permits the use of a non-rising stem which is desirable in many installations.

GATE VALVE No. 600—For steam, water, oil, air, vacuum or gas service at 125 lbs. working steam pressure where a full unobstructed flow is desirable. Double wedge disc in this valve insures positive shut-off.

HAMMOND VALVES—Standard of value with the trade for over thirty years

☆ ☆ ☆

HAMMOND BRASS WORKS

Valve Department, Hammond, Indiana

PUT YOUR SCRAP INTO THE FIGHT

HAMMOND VALVES

H

Look for the (H) on the body—the mark of a dependable valve

"ICI" Aims for a Single Industry

PLANS for the formation of an industry-wide cooperative educational program known as the "Indoor Climate Institute" which aims to acquaint the American public with the best equipment and methods for producing indoor comfort in the post war homes of tomorrow, were disclosed by Paul B. Zimmerman, vice-president, Airtemp Division, Chrysler Corp., speaking before the National Warm Air Heating and Air Conditioning Assn. in Chicago May 26. The Indoor Climate Institute program, which has been under consideration by a steering committee representing all divisions of the heating industry for several months, will be presented to other leading associations at their earliest meetings.

Indoor Climate Institute program is planned as educational and promotional in nature, and its supporters say it will not supersede any of the operating functions of the various trade associations in the heating and air conditioning industry.

Details of the program have been worked out by P. B. Zimmerman, chairman; C. E. Lewis, Delco Appliance Corp., C. T. Burg, Iron Fireman Mfg. Co.; L. N. Hunter, National Radiator Co.; J. M. McClintock, Illinois Iron and Bolt Co.; C. D. Lyford, Minneapolis-Honeywell Regulator Co.; J. R. Scott, Mueller Furnace Co.; J. W. Grover, Surface Combustion Corp.; A. T. Atwell, Quaker Mfg. Co., and W. H. Knowlton, Airtemp Div., Chrysler Corp., secretary.

When the final organization of the Indoor Climate Institute is perfected as a non-profit corporation it will be governed by a group made up of individuals representing trade associations in the fields of boilers, controls, warm air heating, oil burning units, gas equipment, stokers, steel boilers and auxiliary equipment. Additional representatives at large will serve on the board.

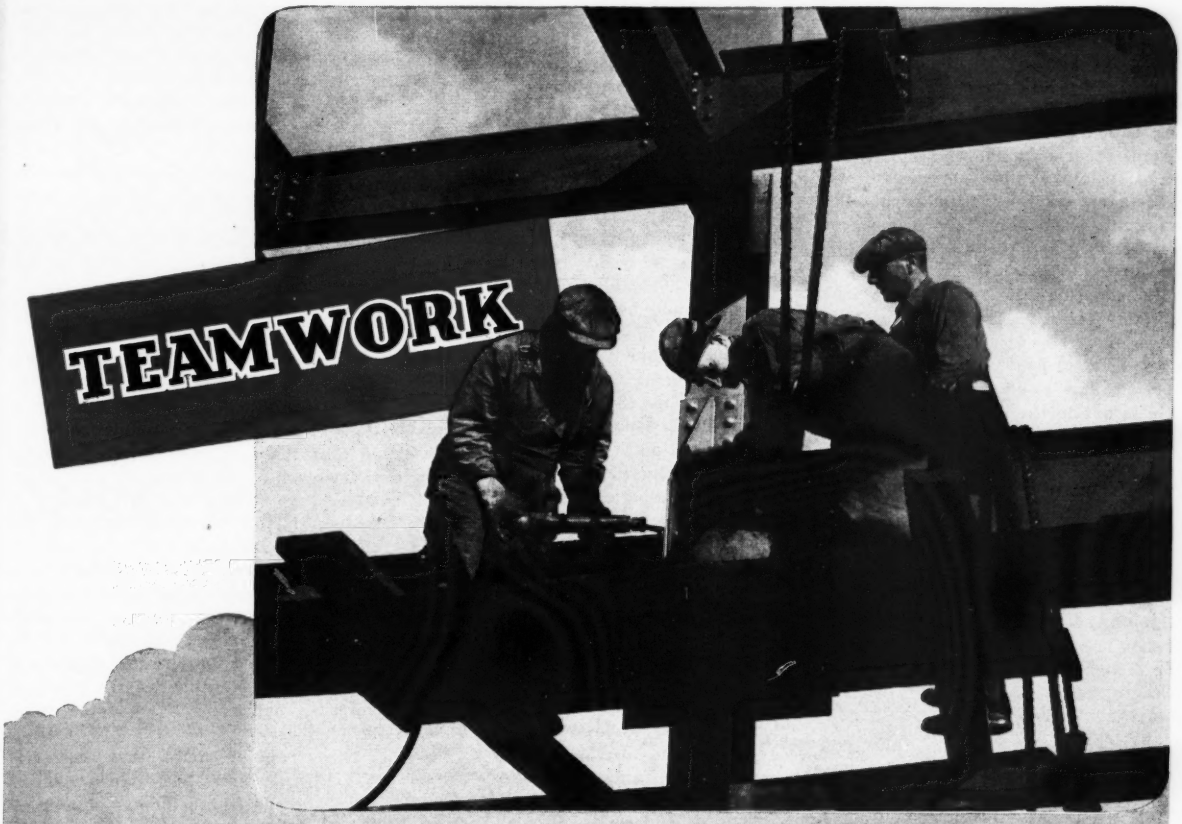
The Indoor Climate Institute will be supported by subscriptions from manufacturers of heating units and auxiliary equipment in the heating and air conditioning industry, it is announced.

Promotional and educational plans formulated in the headquarters' office are to be carried to local organizations in the key cities of the country. It is expected that the local groups will be supported by fuel interests, utilities, dealers, contractors, jobbers, manufacturers' agents, and others interested.

In answering the question, "Why a national cooperative program?", Mr. Zimmerman stated that the public is somewhat confused by the many general claims made for all types of heating and air conditioning equipment, and it has not yet been sold on good heating and air conditioning as a sound value.

"By combining its educational and promotional efforts, the industry as a unit can give the public one single strong story without the usual conflict of individual advertising. This story will be of news interest and will be well supported by the press, because it will per-

Organization activities of the Indoor Climate Institute are being directed by members of the Steering Committee shown above: (front row left to right) P. B. Zimmerman, Airtemp Div. Chrysler Corp., chairman; C. T. Burg, Iron Fireman Mfg. Co.; W. J. Grover, Surface Combustion Corp.; J. M. McClintock, Illinois Iron and Bolt Co.; A. T. Atwell, Quaker Mfg. Corp.; (back row left to right) C. E. Lewis, Delco Appliance Corp.; L. N. Hunter, National Radiator Co.; C. D. Lyford, Minneapolis-Honeywell.; J. R. Scott, Mueller Furnace Corp.; and W. H. Knowlton, secretary



Does Even the Biggest Job Better

The biggest job ever tackled by American industry is well on the way to successful completion. In production for war, teamwork played a most important part—the kind of teamwork that enabled three or four makers of dissimilar products to get together to produce new, vitally important equipment.

When you're handling Perfex-controlled heating equipment, you are part of a team whose other two members do all they can to make your job easier. Teamwork between Perfex engineers and equipment manufacturer's designers always has done and always will do a better job of fitting controls to equipment. Installation of Perfex-built controls is consequently made easier and simpler for the team's third member, the dealer, when he takes over. And this team plays in *uniform,* for the controls carry the same name as the rest of the installation.

Our industry still has a big job ahead of it. You'll do your part better with the help of this kind of teamwork.

PERFEX CORPORATION

500 W. Oklahoma Avenue, Milwaukee, Wisconsin

mit the publishers to promote this great new development without being partial to any one interest."

In presenting an outline of the Indoor Climate Institute program Mr. Zimmerman called attention to the success of several other national educational programs. One of the most successful ever undertaken was the "Better Light—Better Sight" program, established by several hundred manufacturers of portable lamps.

By adopting the "I. E. S." label for lamps meeting high standards, and by gaining the support of schools, colleges, medical people, and the Eyesight Conservation Council, this group was able to obtain the support of the larger stores. The result was the increased sale of better lamps, based on the public demand for good lighting.

"A similar program was carried out by the Reflector and Lamp Manufacturers in the industrial lighting field. This group eliminated expensive and unnecessary technical engineering services which had been a part of every lighting installation, and at the same time gave the industrialist a simple formula for obtaining good lighting which he could understand. The effect was to eliminate many undesirable practices in the commercial lighting industry.

"Household refrigeration was not 'sold' to the public until the industry finally banded together in 1926 to form the Food Preservation Council. Adopting the slogan, 'Below Fifty Degrees Lies Safety' the group obtained the help of national magazines, the trade press, schools, utilities, and other institutions in teaching the American housewife the importance of food preservation. Attaining a phenomenal success, sales rose from less than 300,000 refrigerators in 1926 to over three million in 1940. Sales of ice refrigerators were also greatly improved during this period."

Following are details of the plan as explained by Mr. Zimmerman and as contained in a release by the Indoor Climate Institute, New Center Bldg., Detroit:

(Continued on Page 114)

One Viewpoint

Following are viewpoints on the I. C. I. plan—excerpts from a longer article on this subject—by Wm. E. McFee, American Rolling Mill Company—Ed.

LET us define "indoor climatizing" as the science, or business, if you like, of providing a healthful indoor climate—wherever that indoors might be. Heating and air conditioning, as we have come to know it, are not the only

factors. Especially is this true of heating, where for years there have been several well-established systems. Perhaps it would be well in the era just ahead for all these "schools" of heating to work together toward a common goal instead of going their separate ways as they have done in the past. This would not eliminate competition, nor should it; for competition is still the life of trade.

"Indoor climatizing" has become increasingly important in the past few years because of the emphasis, medical and otherwise, that has been placed upon good health. In the temperate climate people pass much of their time indoors during at least six months of the year. They work in shop, factory or office and live in homes,, for the most part.

They breathe air—to live—and that same air affects importantly their skin and internal organs and, yes, their minds. Sluggish atmospheres, for example, produce sluggish minds. There is no escape from it.

In a recent address before The National Warm Air Heating and Air Conditioning Association, Richard N. Jones made some interesting comments. Looking into the future, Mr. Jones sees some "explosive possibilities." "First of these," he observed, "has been the steady approach toward integration of the house as a whole, a process which we are convinced will resume with great rapidity after the war and will undoubtedly find its most pronounced expression in prefabrication.

"As far as the heating system is concerned," Mr. Jones believes, as do others, that there is a "tendency toward reduced bulk and especially toward designs in which various heating elements in various rooms of the house are either manufactured as parts of walls, floors or ceilings, or as more or less packaged units which can be fitted into the house with the least possible labor. Developments in metallurgy and fabrication techniques now being made for war purposes will undoubtedly find expression in the heating plant of the post-war period."

In another significant statement, Mr. Jones leads us right to the crux of the problem and the opportunity . . . "Another tendency we have observed has been the attempt to integrate all the plumbing and mechanical services, thereby leading to the development of a mechanical heart for the house, to be manufactured in quantity and installed as a complete package. Here again is the argument in favor of the utmost in compactness and light weight.

It is one thing to talk about a "packaged indoor climate," and something else to consider what must be in that package. For one thing, it must be complete. It must perform all the functions that air conditioning, or air climatizing, is supposed to perform. In winter it must heat, humidify, dehumidify when necessary, filter or clean, possibly sterilize, and circulate efficiently.

In summer it must cool, dehumidify, clean, again possibly sterilize, and circulate efficiently. All these functions must be under "magic control"; so that the occupants can provide for themselves at all times the kind of indoor climate they will be educated to understand as the most healthful and the most comfortable.

The experience of the railroads is a memorable lesson. Before the war, at least, the train that was not air-conditioned was a second-rate train. Travelers had learned the meaning to them of air-conditioned trains, partly from advertising but mostly from actual experience.

Never again would they be satisfied with anything less than a comfortable and healthful indoor climate as they rode. And once home-living people experience the benefits of controlled indoor climate they too will never accept anything less than the greatest benefits the heating industry can offer them.

Below: Paul B. Zimmerman, vice president, Airtemp Division, Chrysler Corporation, as he addressed the recent meeting of the National Warm Air Heating and Air Conditioning Assn. It was at this meeting that Mr. Zimmerman revealed plans for the "single industry" idea of the Indoor Climate Institute

WATER PRESSURE SYSTEMS

Save Man-Power on Farms

HOW to raise more food with less help is the farmer's problem this year. To help meet this critical situation our government has increased quotas of implement and water system manufacturers so that more labor-saving equipment will be available.

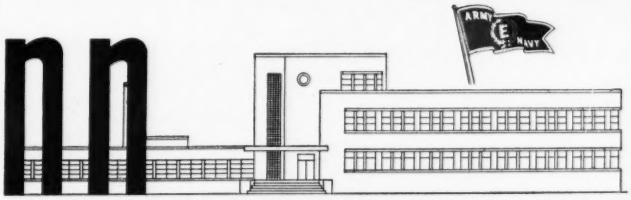
It takes more water to produce more food—and water under pressure saves farm man-power for other important jobs.

Penn Automatic Switches and Air Volume Controls

are being supplied as standard equipment by leading pump manufacturers. These controls, available for both shallow and deep well pumps, embody exclusive features and advanced engineering which assure efficient, dependable operation. Finest materials and precision manufacture insure long life in continuous service.

When you install a pump with Penn controls you're sure of a satisfied customer. *Penn Electric Switch Co., Goshen, Ind.* In Canada, Powerlite Devices, Inc., Toronto, Ont.

Penn 114 Series Pressure Controls are modern in appearance..compact .. sturdy. Available in a wide selection of pressure ranges to fit all applications.
Penn Type 191 Deep Well Air Volume Control available with or without external gauge tapping.
Penn Type 190 Shallow Well Air Volume Control available with or without external gauge tapping.



PENN

AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

Oil Burner Men Look to Postwar

ACCORDING to information received from C. F. Curtin, secretary of Oil-Heat Institute of America, a strong committee of postwar planners has been appointed by Pres. C. E. Lewis to take under advisement the major issues that will have to be considered and dealt with in the postwar days when the industry again resumes its normal course and enters the wide market for automatic heat that will be made available by the vast construction of new homes and the equally huge reconstruction period.

The committee met in a full day session at the Commodore Hotel, New York City, on May 10 and has already set up the preliminary machinery for analysis of the major factors that are fundamental to the industry's continued successful growth. Mutual cooperation with the oil industry and other branches of the heating industry is indicated as well as the issuance of a clear cut pronouncement of the availability of fuel oil in the future. An analysis of the over-all postwar market will be undertaken as well as study of existing standards of materials, construction and performance of oil heating equipment. Steps to strengthen standards, where desirable, will be taken so that the oil burner of the future will continue to deserve the loyalty of users.

The Advisory & Postwar Planning Committee is headed by W. A. Matheson, chairman (Oil-O-Matic). Members are: W. F. Brannan (Anchor Post), Hugh Courteol (Mercoid), Alexis Doster (Torrington), E. A. Halbleib (Delco), W. A. Kemp (Sundstrand Machine), S. A. Loeb (Webster), J. K. Luthe (Perfex), J. H. O'Brien (Petro), Albert Penn (Penn), J. P. Rainbault (General Electric), W. F. Rockwell (Timken), R. M. Sherman (Silent Glow), Harold W. Sweatt (Minneapolis-Honeywell), G. B. Tuthill (Tuthill Pump).

AUTOMATIC HEAT and AIR CONDITIONING Section

Conversion Policy

Washington D. C.—The question of whether a householder can or cannot convert his oil burning heating plant to the use of coal or wood will not be raised in connection with next season's domestic fuel oil rations, Price Administrator Brown has announced.

This elimination of all "convertibility tests" for private dwellings is one of the main features of a revised conversion policy that seeks to balance the available supply of all types of fuel throughout the 30 eastern and mid-western states and the District of Columbia where fuel oil is rationed.

This modification of present regulations means that the question of convertibility will not be pressed when home owners apply to War Price and Rationing Boards for auxiliary or supplementary rations of fuel oil. During the past year such rations have been denied unless the householder could prove that his oil system could not be converted to coal or wood. Basic rations, however, were and will continue to be provided regardless of convertibility.

The new policy to be made a part of the fuel oil rationing program recently announced by the Office of Price Administration was formulated after an extensive study by a committee representing all federal agencies concerned with the fuel supply and transportation problems, Mr. Brown said.

The new policy on conversion also:

1. Permits in certain areas the continued use of oil by a large number of consumers in other than private dwellings (apartments, boarding houses, hotels, theaters, office buildings, factories, etc.)

2. Continues the present policy of denying heating or hot water rations for all "convertible" buildings other than private dwellings in all the remaining rationed states — New York, Pennsylvania, New Jersey, Delaware, Maryland, West Virginia, Virginia, North Carolina, South Carolina, Ohio, Kentucky, Indiana, Illinois, Michigan, Wisconsin, Iowa, Minnesota, and the District of Columbia.

Workmen here begin laying the first New Jersey section of the "Big Inch" oil pipeline. Big Inch will be the longest pipeline ever constructed in this country and will connect Bayonne, N. J. with the oil fields of Texas. Breaks in the flooded Midwestern section of the line have caused serious disruptions of oil deliveries in the Eastern part of the country (Acme photo)

Protecting your Range Boiler Installations—

SCAIFE RANGE BOILERS

SCAIFE COMPANY

eneral Offices and Works: OAKMONT (Pittsburgh District), PA.

Manufacturers & Wholesalers

"E" Awards

Announcement has been made that the coveted Army-Navy "E" production award has been given to two more members of the industry.

The John Douglas Company of Cincinnati, Ohio, received the award at a ceremony on May 12. John J. Rowe served as Master of Ceremonies; Major George E. Fee, U. S. A., made the presentation speech; C. W. Metz, president, accepted for the company; Commander G. H. Bowman, U. S. N., presented the Army-Navy "E" emblems to the employees; Dewey Leigh made the acceptance speech for the employees, and the Honorable James Garfield Stewart, Mayor of Cincinnati, delivered the principal address.

The Mueller Co., of Decatur, Ill., received its award at an impressive ceremony held May 27.

Oil-O-Matic Bonds

At Bloomington, Illinois, on May 18, employees of the Williams Oil-O-Matic Heating Corporation were guests at special ceremonies saluting a fighter plane named "Employees of Oil-O-Matic" and the men and women whose bond purchases its name honors.

On March 28, Oil-O-Matic officials received War Labor Board notice that newly approved wage scales were retroactive to December 1, 1942. Almost immediately employees started their own drive to invest the back pay in War Bonds, especially earmarked to purchase a fighter plane. When the drive had ended, $100,000 had been subscribed, enough to buy the fighter plane and also to equip the fighting man who will fly it. The $100,000 worth of Bonds purchased during the drive were over and above the 10% plan in which all Williams' workers are enrolled.

Pressed Metal Inst.

In an effort to speed the production of vital war materiel some sixty representatives of sheet and strip metal fabricators, rolling mills and metal press manufacturers met on March 17 to organize the Pressed Metal Institute.

George B. Whitlock, president of Mullins Manufacturing Corporation, Warren, Ohio, will serve as the Institute's first president. In discussing the Institute's objectives, Mr. Whitlock said that "leaders in the industry are convinced that only by united effort, exchange of data, and pooling of experience can maximum results be obtained and, therefore, the Pressed Metal Institute was organized."

Other officers are: S. J. Menzel of Motors Metal Manufacturing Company, Detroit, vice-president; and H. L. Moody of Stevenson, Jordan & Harrison, New York, secretary-treasurer and managing director. The Institute will have main administrative offices at 19 West 44th Street, New York City, with a Washington Office at Press Building, Corner of 14th and F Streets, N. W.

AGAEM Meets

Continuing its program of reorganization for better service to members during the war and the coming peace, the Association of Gas Appliance and Equipment Manufacturers met April 28 at the Hotel Netherland Plaza, Cincinnati.

One of the most interesting addresses of the meeting was given by George H. Richards, of the law firm of Reynolds, Richards and McCutcheon, New York City, the Association's new legal representative. Mr. Richards described the V-Loan program for war production. The advantage of V-Loans to the banker is that they are guaranteed by the government; the advantage to the borrower is that if the war contract is canceled through no fault of the manufacturer, interest is waived and maturity is extended, thus providing working capital for the post-war period.

Lyle C. Harvey (Bryant Heater Company), in presenting the report of the committee on reorganization, stressed the fact that the new officials would bring about closer relations with the American Gas Association and its Testing Laboratories, and would offer new and vital services to A.G.A.E.M. members.

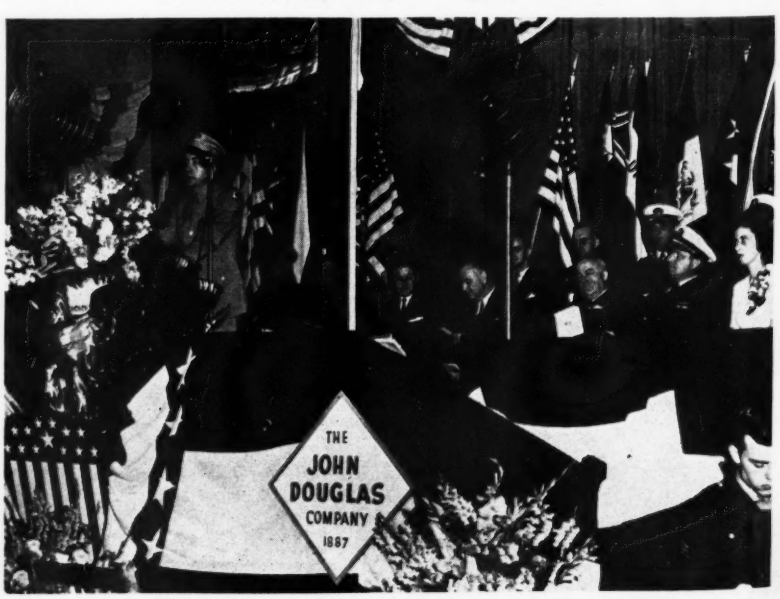
In line with the recommendation of the committee on reorganization, H. Leigh Whitelaw was chosen the new managing director, while Leonard Macomber was appointed Washington representative to replace A. F. Cassidy, who is entering the armed forces. New offices have been established in Room 527, Munsey Building, Washington.

Other speakers were Mr. Macomber, who announced the inauguration of a bulletin to members, covering Washington developments and trends; President Rockwell and Treasurer Van Norden.

ACRMA Elects at Annual

W. H. Aubrey, vice president of Frick Company, Inc., was elected president of the Air Conditioning and Refrigerating Machinery Assn., Inc., at its annual meeting, May 14, at the Waldorf-Astoria in New York City. Other officers are J. P. Rainbault, General Electric Com-

Major George E. Fee making the presentation speech at the award of the Army-Navy "E" award to the John Douglas Company, Cincinnati



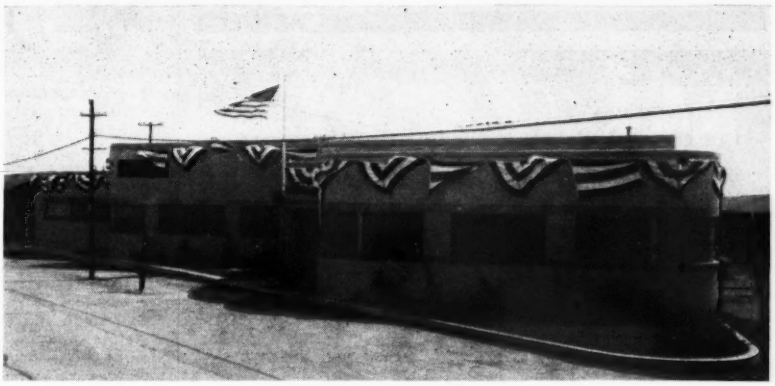
pany, first vice president; D. W. Russell, Airtemp Division, Chrysler Corp., second vice president; and P. A. McKittrick of the Parks-Cramer Company, treasurer.

E. T. Murphy, vice president, Carrier Corp., was elected to the chairmanship of the board of directors. In addition to the officers, the members of the board are: P. Y. Danley, Westinghouse Electric and Manufacturing Company; F. T. Goes, The Vilter Manufacturing Company; G. A. Heuser, Henry Vogt Machine Company; S. E. Lauer, York Ice Machinery Corp.; F. S. McNeal, Universal Cooler Corp.; Harry Newcomb, Servel, Inc.; H. R. Sewell, B. F. Sturtevant Company; G. E. Wallis, The Creamery Package Manufacturing Company; C. E. Wilson, Worthington Pump and Machinery Corp. Mary J. Stewart continues as acting secretary of the association.

Oil Heat Meeting

The Oil-Heat Institute of America has announced the "First National and Organizational Meeting of the National Dealer and Distributor Council," to be held at the Blackstone Hotel, Chicago, June 17 and 18. All officers and members of regional and local oil heating groups are invited, as well as dealer and distributor executives from oil heating markets which are in the process of organization.

The purpose of the meeting is the formation of the National Dealer and Distributor Council of Oil-Heat Institute of America, Inc. Officers will be elected, committees selected and a national platform adopted.



Photograph of an addition to the factory of Hammond Brass Works, Hammond, Indiana. This picture was taken at the time of presentation of Hammond Brass Works' Army-Navy E, described in May Domestic Engineering.

Milw. Home Show

The 21st Annual Milwaukee Home show was held at the Milwaukee Auditorium March 13-21. M. L. Lavorgna, Manager of Milwaukee Sales for the L. J. Mueller Furnace Company, acted as Vice-Chairman of the Executive Committee and was appointed Chairman of the 1944 Home Show.

A new emphasis was given the role of heating, at the Home Show, through demonstration of the conversion of a single-family home to a two-unit dwelling. Conservation of today's equipment was stressed throughout the exhibits equally with the promise of future improved conveniences.

Vitreous China Sinks

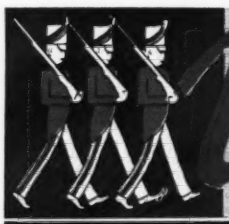
New! Yes, and no. Mansfield designers had been working on the idea of Vitreous China Sinks long before Pearl Harbor. War only served to speed up their introduction. Today, Mansfield Quality Vitreous China is bringing new charm and beauty to the Kitchen. If you are located east of the Mississippi River you will want to get full particulars. Better still, ask your jobber's salesman.

MANSFIELD SANITARY POTTERY, INC.
PERRYSVILLE, OHIO

MANSFIELD
Quality
VITREOUS CHINA

Whenever you think of Vitreous China, remember MANSFIELD -- it's tops for Quality

Look for This Label



Uniform HIGH QUALITY

PICK any length of PITTSBURGH Tube at random and you'll find the same high quality that has made this *better* wrought steel pipe a "buy-word" among the plumbing and heating trade for years . . . the same high quality that these men have found absolutely necessary to a trouble-free piping job.

PITTSBURGH Tube is *expressly* made for use on plumbing and heating installations and for this reason it is easier to cut, easier to thread and easier to bend. Wherever employed it minimizes labor, cuts costs and eliminates all element of chance. Wherever employed it assures your customers the satisfaction they have a right to demand and assures you the measure of profit you have a right to expect.

On your next piping job specify PITTSBURGH Tube and benefit by its uniform high quality.

PITTSBURGH TUBE CO.
PITTSBURGH, PENNA.

PITTSBURGH TUBE COMPANY

Pittsburgh TUBE

PD–1X . . .

(Continued from Page 44)

Now, for example, wholesalers in most sections are permitted a three-month inventory. This will be increased to four months. As a matter of fact, the new form will be even more favorable than is indicated by this factor, because the early inventory figure is based upon the wholesalers selling price, whereas his request for materials is based upon his cost price.

Asked how a revised version of P-84—promised for the near future—would affect the utility of PD-1X, Mr. Hench replied that PD-1X would retain its distinctive advantages. Any rating given by P-84, for example, will be a blanket rating and there will be no assurance that such ratings will be high enough to obtain all materials needed. On the other hand, the ratings given through PD-1X may be varied, and will generally be at least as high or higher than the P-84 blanket ratings.

One widespread misconception has blocked wholesalers' use of PD-1X; that was the understanding that a PD-1X form could only be sent in once in three months. Mr. Hench emphasized that such is not the case, and that a PD-1X may be submitted whenever material and equipment of a given type is necessary to replace the wholesaler's inventory.

PD-1X was created — and given to the Wholesale and Retail Trade Division for administration—upon the basis for a well-proved need to have plumbing and heating materials assembled in stock locally, where they could be obtained immediately in case of emergency. No other type of arrangement has been designed to do this essential job.

Movie . . .

(Continued from Page 60)

tingly in New York and the East. R. K. Landreth has been a leader in the outstanding work of the Texas Association. Others have been similarly cooperative.

"Boards of health have displayed more interest than any other group," continues Mr. Lang, "for example, Walter Spencer, supervisor of the Bureau of Plumbing and Domestic Sanitary Engineering for Wisconsin, reported that Field Supervisor John Owens made 39 showings of the film between April 6 and 29. Seven cities were visited on this tour."

Mr. Lang is certain that eventually practically all sections of the nation will participate fully in this public relations program by showing the film. The success of one section is contagious in bordering sections but this is a relatively slow process involving: 1. much correspondence and detail work in Mr. Lang's office; 2. a considerable degree of local and state leadership among master plumbers; 3. the obtaining of projectors, operators and suitable halls locally.

"If and when we can place the 20 films in the hands of the booking agency," concludes Mr. Lang, "we will obtain a multiplied audience immediately and will receive multiplied benefits from our own work and the industry's contribution. We will receive these benefits uniformly throughout the country. And finally, we will receive these increased benefits without imposing upon local officers, committees and volunteers.

"The health importance of plumbing will be explained to the American public—insofar as possible through this one picture—and we can then go forward to the next phase of our industry's public relations program."

The following is a table showing money subscribed, since July 1, 1942, for the purpose of promoting the film. This is in addition to the $22,000 plus received for producing it.

Plumbing contractors	$ 773.50
Master plumber associations ($500 contributed by California)	660.00
Journeymen	221.00
Wholesalers	26.00
Manufacturers	40.00
Women's auxiliaries	30.00
Inspectors	23.00
Total	$1773.50

Products, Methods . . .

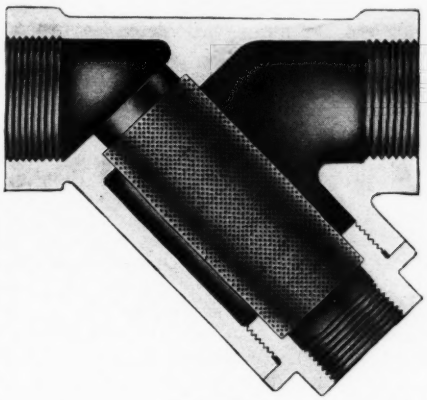
TIME SWITCHES

(Continued from Page 57)

ing when heating plants are shut down or maintained at a minimum during those periods when heat is not required. One manufacturer reports that users claimed fuel savings ranging from 20 to 40 per cent. They have a special application today in connec-

(Continued on Page 117)

Call on K & M . . . *to Keep Your Control Equipment at Peak Efficiency!*



Our entire manufacturing output has gone to war . . . but 65 years of know-how is here to help you. If you have a pressure or fluid control problem—*any kind* of an installation, operating or maintenance problem—*call on K & M.* Our new VALVE PROBLEMS CLINIC is a clearing house of information established to help keep your business going. There is no charge for this service. You needn't be using K & M equipment. But you have a job to do . . . and we want to *help* you do it, with specific, informative, resultful assistance.

K & M STRAINERS—"Y" and Basket Types for use on steam, water, gas, air, oil, and other fluids. Note the oversized strainer basket area to assure minimum pressure loss. Baskets are easily accessible for cleaning. These features are typical of the simplicity and efficiency of K & M design.

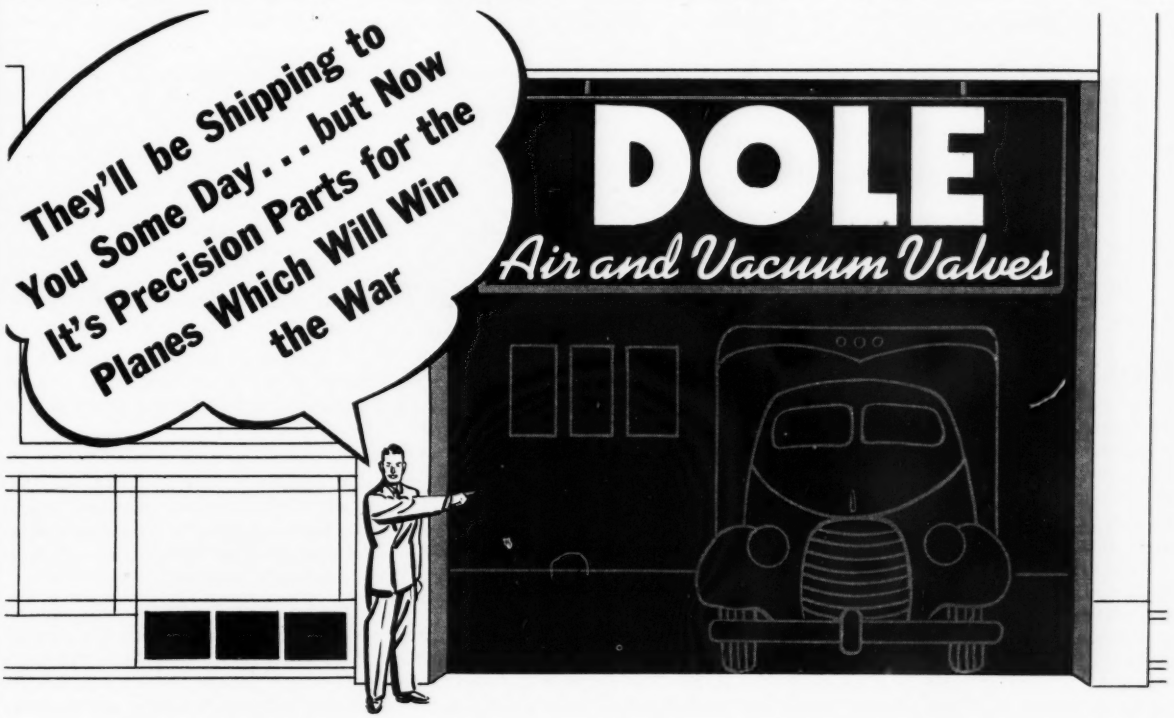
KM KIELEY MUELLER ESTABLISHED 1879

Kieley & Mueller

ENGINEERED PRESSURE & FLUID CONTROL SPECIALTIES

NORTH BERGEN, NEW JERSEY

Representatives in all Principal Cities


They'll be Shipping to You Some Day . . . but Now It's Precision Parts for the Planes Which Will Win the War
DOLE
Air and Vacuum Valves

THE DOLE VALVE COMPANY

1901-41 Carroll Avenue, Chicago, Illinois • ***Representatives in Principal Cities***

Mid-Atlantic Supply

The Middle Atlantic Plumbing and Heating Wholesalers Association held its spring meeting at the Bellevue-Stratford Hotel, Philadelphia, on April 30. Pres. Wm. A. Brecht was in charge of the afternoon session, which was addressed by James E. Fitzgerald of the Steel Division, WPB, by Ellsworth Vines of the Controlled Materials Plan Division, WPB, and by Harry G. Starr of the American Institute of Wholesale Plumbing & Heating Supply Associations.

L. U. Noland, Newport News, Va., addressed the dinner meeting.

Ill. Sales Tax

A special committee of the Building Construction Employers' Association of Chicago, on the Illinois Retailers' Occupation Tax, is endeavoring to secure for plumbing and heating contractors and others engaged in the building business a refund of sales taxes paid from February 2, 1938 to April 30, 1941. Under the present refund statute, those who paid sales tax during this period are entitled to a refund of those taxes if they absorbed them instead of passing them on to the consumer. About 150 plumbing and heating contractors in Illinois have signed claims for refund.

Phila. Suburban

The Philadelphia Suburban Master Plumbers Association held a meeting April 20 in Upper Darby. Pres. Ed. Fields acted as chairman. John Lamond, national director of the NAMP, addressed the meeting. Other speakers were Fred Kennech, state president; Jas. H. Lutz, Jr., past state president; James McStay, state secretary; and James F. Rhoades, past state president, as well as members of the local organization.

Michigan Trade Golf

The first 1943 business meeting of the Michigan Trade Golf Assn. was held recently and the following officers were elected: W. J. Rewoldt, president; Harry C. Winston, vice president; John T. Holder, secretary; Ernie Sanger, treasurer; E. J. Anderson, captain.

Appointments made by the new president are as follows. The membership committee is made up of Ray Adam, chairman, W. T. Andrew, H. M. Armstrong, R. L. Deppmann and Edward A. Page. The board of governors consists of H. E. Paetz, chairman; Frank Marzolf and Earl D. Sheley. Secretary Holder reports that golf meets will be continued as in past years even though dinners will not be served regularly.

Boston ASHVE Meets

Postwar living predictions will become realities in most instances, it was declared by John E. Haines, manager of the air conditioning controls division of the Minneapolis-Honeywell Regulator Co., in addressing a meeting May 18 of the Boston Chapter, American Society of Heating and Ventilating Engineers.

"Most of the products and plans currently proposed are well founded on engineering experience; many, in fact, were well started before the war," he said.

"But," he added, "a small minority of planners are predicting fantastic and impractical products and designs for living. Unfortunately, these few dreamers have caught the fancy of the public which loves to read about this sort of thing."

Practicality and sound engineering should supersede appearance, Haines said, just as it has in most office buildings, stores, restaurants, theaters and even factories built during the last few years which were engineered for the comfort of the occupants.

L. A. Hears Blankin

A talk on the activities of the American Society of Heating and Ventilating Engineers in war time was delivered at the May 17 meeting of Los Angeles Chapter, ASHVE, by M. F. Blankin of Philadelphia, national president of the society.

Mr. Blankin declared that research and laboratory work now are concentrated on development of air handling methods for human comfort and for devising better means of air conditiong for industrial processes.

New officers elected by Los Angeles ASHVE Chapter at this meeting were: W. O. Stewart, Johnson Co., president; Leo Hungerford, Utility Fan Corp., vice-president; Maron Kennedy, York Ice Machinery Corp., secretary; Arthur Theobald, Payne Furnace Co., treasurer; and Howard Bullock, chairman of the board.

Baltimore Activities

On May 6 and 13, the Assn. of Master Plumbers of the State of Maryland, Inc. held meetings at their Baltimore headquarters. The proposed revision of WPB order P-84 was discussed at length.

The annual dinner dance of the association was held on May 1 at the Emerson Hotel. The program included patriotic addresses by President McLain and Secretary Wirth, and an excellent floor show. Among the guests were delegations from several out-of-town organizations.

News Briefs . . .

American Molded Products Sales Company, 1753 N. Honore St., Chicago, has announced its appointment as distributor for Dow Chemical Company. It will handle the latter company's line of Saran plastic tubing and fittings, pipe and fittings, and sheet fabric.

Swedish Crucible Steel Company has appointed three new representatives. They are S. Arthur George, who will cover northern Ohio; S. D. Mizell, for Georgia and Florida, and Charles Homan, to cover southern Ohio and southern Indiana.

J. H. Williams & Co., announces the removal of its stock products sales offices from 225 Lafayette St., New York City, to the plant at Buffalo, N. Y. A local sales office will be maintained at the Lafayette Street address to serve the Metropolitan area only.

Eljer Co., Ford City, Pa., has announced two management promotions. David E. Gulick was elected vice president in charge of sales and will assume more general and advisory duties; David J. Crane, formerly assistant sales manager, has been named sales manager.

Dravo Corporation of Neville Island, Pittsburgh received a safety award on the May 14 broadcast of "The Ghost Shift"—a weekly program devoted to the furthering of safety in war plants. The award is certified by the National Safety Council and its War Production Fund to Conserve Manpower.

W. E. Mallalieu, general manager of the **National Board of Fire Underwriters,** has announced a revision in the board's recommended building code. In the revised code no attempt is made to dictate choice of materials, assemblies or designs, so long as a proper degree of safety and health is attained.

E. A. Ileman has been appointed engineer in charge of production and development by the **Everite Pump & Mfg. Co.,** Lancaster, Pa.

Martin Metal Manufacturing Co., 900 E. Second St., Wichita, Kansas, has changed its name to **Cantrell Supply Co., Inc.,** according to an announcement received from H. T. Cantrell, president and general manager.

Young Radiator Company, Racine, Wisconsin, has announced the appointment of A. R. Johnson, who will maintain offices in Long Beach and Los Angeles, California, as sales and engineering representative in the California territory south of and including Inyo, Kern and San Luis Obispo counties and Clark county in Nevada.

precision . . . from furnace to mould . . . . .

★ Men of many years experience and "KNOW HOW" plus laboratory control through every phase of our foundry work—correct metal mixtures and strict regulation of pouring temperatures, are some of the reasons for the consistently high quality and uniformity of STREAMLINE Fittings. PRECISION STARTS WITH THE CORE AND ON FROM FURNACE TO MOLD AND MACHINE SHOP.

STREAMLINE Fittings and Copper Pipe are now in the service of our country for many purposes. They are installed in naval vessels of practically all types, including victory ships, subchasers, submarines, mine sweepers, etc. A tremendous amount of Copper Tubing, which in peace years provided peak performance in many of the best plumbing and heating systems in America, is now installed in the great majority of Tanks built in the United States and Canada.

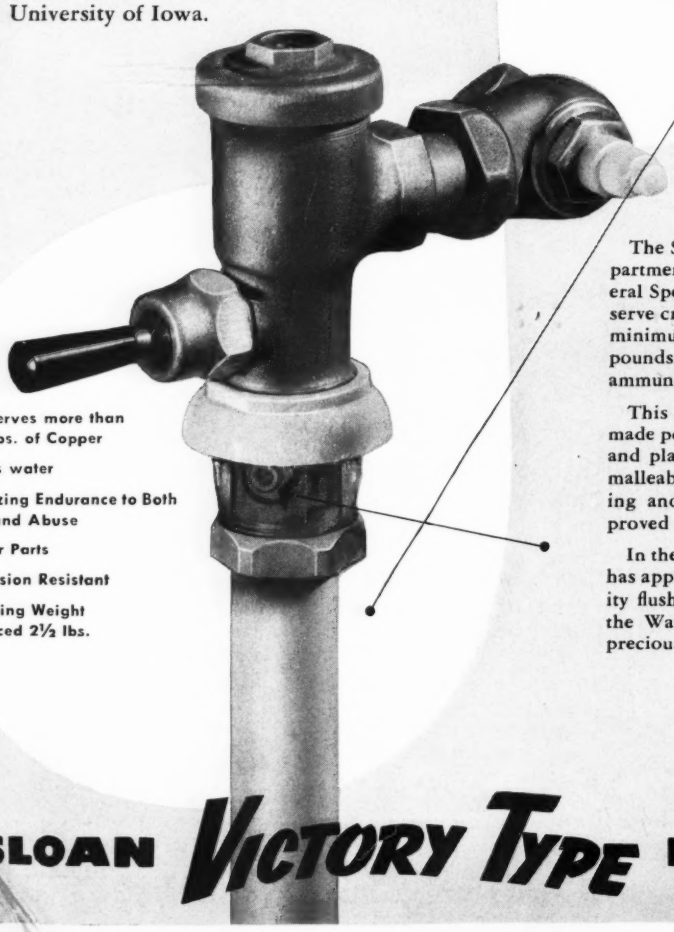
When peace returns to the world, the plumbers and steamfitters of America will again install STREAMLINE Fittings and Copper Pipe to protect the health of the nation as they are now helping to protect the lives of our men in our armed forces.

1. Pouring the Metal.
2. Pyrometer reading for measuring temperature.
3. Pouring the moulds.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN

NOW YOU CAN SEE HEALTH PROTECTION

Because vacuum breakers protect public health by preventing back syphonage, it is vitally important that they function perfectly at all times. In the Sloan V-100-A All Plastic Vacuum Breaker, you can now look through the transparent housing and actually *see* the butterfly valve in operation. This unique advantage gives you the surest means of checking on your vacuum breaker to see that it is actually protecting your potable water supply. This vacuum breaker, made entirely of highest quality plastics, is the same in functional design as the original V-100-A, which was the first vacuum breaker to be accepted by the National Plumbing Laboratory at the University of Iowa.



Conserves more than 5½ lbs. of Copper

Saves water

Amazing Endurance to Both Use and Abuse

Fewer Parts

Corrosion Resistant

Shipping Weight Reduced 2½ lbs.

The Sloan VICTORY Valve conforms to War Department Specifications PE-623 and Emergency Federal Specifications E-WW-P-541a. Designed to conserve critical material, the VICTORY Valve uses the minimum amount of copper—in fact, more than 5½ pounds of copper per valve is now released for arms, ammunitions and other direct War uses.

This tremendous saving in critical material was made possible only through the use of malleable iron and plastics for component parts of the valve. The malleable iron parts have a baked-on protective coating and the whole valve, after rigorous tests, has proved itself far beyond expectations.

In the VICTORY Valve, the Sloan Valve Company has applied its every resource to produce a high quality flush valve which, in patriotic cooperation with the War program, uses the irreducible amount of precious copper.

SLOAN VALVE COMPANY
4300 West Lake Street
CHICAGO

SLOAN *VICTORY TYPE* FLUSH VALVES

News of Contractors . . .

S. F. P. & H. Club Elects

On the eve of its seventeenth birthday, the Plumbing and Heating Club of San Francisco held its annual meeting April 29 at the Merced Club, with Pres. John F. Heil, presiding.

The following members were elected to serve on the board of directors: Pres. John F. Heil, Youngstown Steel Products Co.; Vice Pres. Elmer K. Ross, M. Greenberg's Sons Co.; Treas. Morgan Willey, Sloan Valve Co.; Ross M. Clark, American Radiator-Standard Sanitary Corp.; Harry Morse, Grabler Mfg. Co.; John Traynor, Hawes Sanitary Drinking Faucet Co. and J. J. McLeod, plumbing contractor.

Except for the formalities attending the choice of new directors, the entire evening was given over to dinner and recreation. Eighty-five members and guests enjoyed the turkey dinner (turkey being unrationed), but Secretary Hal Sales admitted that considerable legwork was involved canvassing the membership to secure the required amount of coffee and sugar.

The following were admitted to membership: M. J. Burress, manager, Crane Co.; Peter E. Albera, Elmhurst Laundry Tray Co.; Geo. M. Richardson, Phelps, Dodge Copper Corp.; Oliver Q. Seely, General Controls; Chas. Lundy, Gilmore Steel & Supply Co.; and C. S. Larsen, manager, Wheeling Steel Corp.

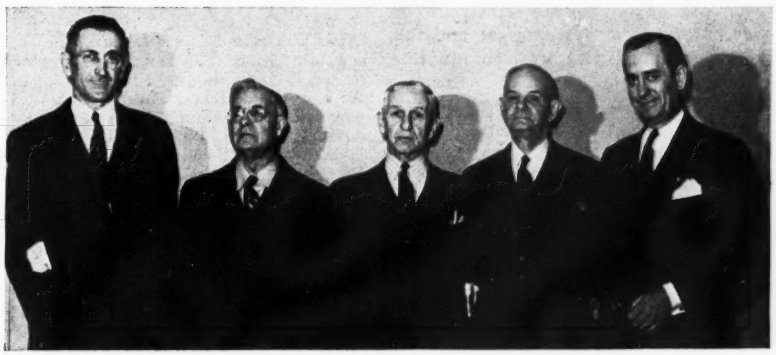
Col. Society Meets

More equitable production and distribution will result if and when House Bill S-885, which provides for the creation of a Civilian Supply Board, passes congress, it was stressed at the 46th annual convention of the Colorado Society of Sanitary and Heating Engineers held at the Shirley-Savoy hotel, Denver, Colo., May 17 and 18.

T. W. Merryman of Chicago, president of the National Association of Master Plumbers, in addressing the convention, declared government control to insure sufficient plumbing supplies for civilian use is a necessity.

Edwin B. Clayton, president of the association, in opening the convention declared that with a ratio of one lavatory to every eight men and one shower to every twelve, American army camps are the best plumbed quarters for fighting men in the world.

Edwin B. Clayton, E. B. Clayton Plumbing & Heating company, Denver, was elected president for his seventeenth term. Other officers are John Dalton, Boulder, vice president, and William Gross, Golden, sergeant-at-arms. J. P. Brickey, Denver, secretary-treasurer, and Frank Hanlin, executive secretary.



The photograph above was taken at the convention of the Colorado Society of Sanitary and Heating Engineers. Left to right: Wm. Gross, sergeant-at-arms; E. B. Clayton, president; Frank Hanlin, executive secretary; J. P. Brickey, secretary-treasurer, and T. W. Merryman, president, National Association of Master Plumbers

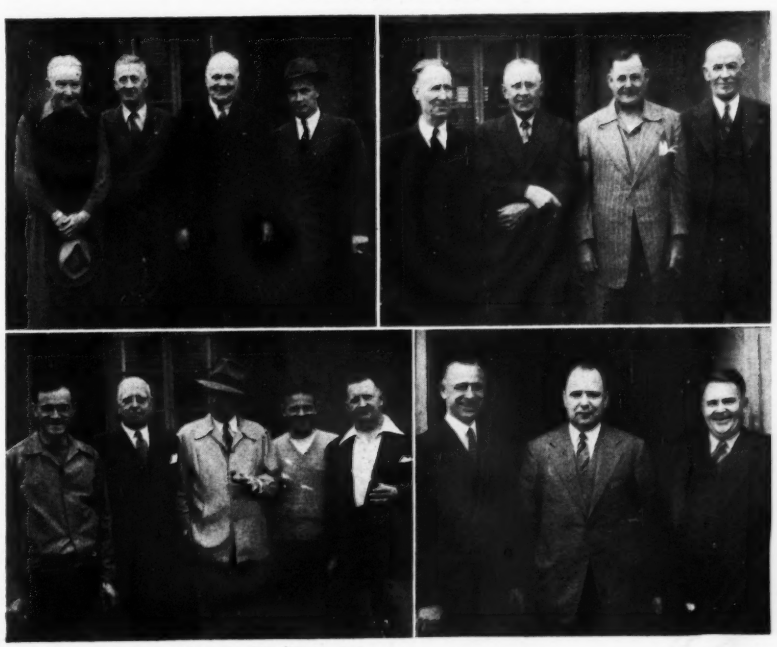
N. C. ASHVE Meets

The North Carolina section of the ASHVE at its annual meeting, Durham, N. C., on May 7, elected F. J. Reed of Durham president for 1943-44. Mr. Reed served as secretary-treasurer during the past year.

Other officers for the ensuing year are: Karl Selden, vice-president; C. Z. Adams, Greensboro, secretary and treasurer.

The principal speaker at the banquet session was Sewell H. Downs of Kalamazoo, Mich.

Pictures taken at the San Francisco Plumbing and Heating Club's annual meeting. Top row, left to right: Harry Haley, T. Carroll Douglass, C. S. Larsen, S. M. Hopkins; J. M. Perlewitz, J. J. McLeod, past president California Master Plumbers Association; Rene Fontaine, Major Henry Dunn. Lower row, left to right: Harry Fabris, W. A. Taylor, M. J. Burress, H. L. Gaut, Honolulu; Charles A. Lundy, C. F. Ceaser, Pres. John F. Heil; Exec. Secy. H. L. Sales



Fla. War Conference

At the one-day wartime conference of the Florida State Association of Master Plumbers and Heating Dealers, Inc. (May 4), Henry G. Dupree of Jacksonville was elected president, to succeed Henry Griggs of Bradenton. Other officers are: Charles Ford of Tampa, vice president; William Dunstan of Leesburg, reelected treasurer; and the following district vice presidents: northeastern district, Robert H. Barrett, Jacksonville; central district, H. D. Loucks, Orlando; southwestern district, J. M. Martin, St. Petersburg; and southeastern district, Tom I. Norfleet, Hollywood.

Delegates to the national convention of master plumbers are Mr. Dupree (ex-officio), Mr. Griggs and L. L. Mears of Miami. Mr. Ford and Mr. Dunstan are alternates.

Two joint sessions were held with the Florida Society of Plumbing Inspectors.

C. W. Ewing, Miami, director of the NAMP, addressed the conference, stressing the threat to continued operation of essential civilian plumbing and heating facilities caused by the inadequacy of materials. The rating of A-10 for plumbing and heating repairs, he declared, is not high enough to permit contractors to obtain needed or minimum repair requirements.

ASHVE Summer Meet

The 1943 summer meeting of the ASHVE will be held in Pittsburgh June 7 and 8. A streamlined, wartime program has been planned, with the technical sessions studded with papers of importance to the war program.

R. B. Stanger, general chairman, points out that in keeping with the times, traditional procedure may have to undergo certain revisions.

Ala. Elects Officers

Jack Main, Montgomery, was elected president of the Alabama Master Plumbers Association on May 18, in a wartime one-day session.

G. H. Stephens, Dothan, was reelected vice president, and J. H. Hamill, Birmingham, treasurer. Approximately 50 members attended the annual meeting.

Iowa Meets for 55th

At the 55th annual convention of the Iowa Master Plumbers Association held in Cedar Rapids, May 3 and 4, a number of speakers, well known in the state and to the plumbing and heating industry, addressed the members. Among them were: Gov. B. B. Hickenlooper, Virgil M. Hancher, president of the University of Iowa; Dean F. M. Dawson of the Iowa State University; E. B. Hauser, secretary of Central Supply Association; Charles Gawne of Chicago, who represented the NAMP president; Wilbert Gregory, general organizer of the United Association; Wm. Ogden, district manager of WPB, and a representative of OPA.

The following officers and directors were elected: F. H. Pierson, Fairfield, president; N. H. Labbitt, Sioux City, vice president; George Puffett, Ames, secretary, H. J. Lorenz, Davenport, treasurer; and George Palmer (Ames), Roy Jenkins (Oscaloosa), H. J. Bruns (Sioux City) and Telford Larew (Iowa City), directors.

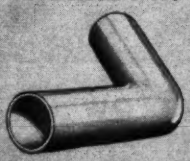
These photographs were taken at the 55th annual convention of the Iowa Master Plumbers Association. Top row: Tom Bowker and Ben Kubias, both of Cedar Rapids; J. P. Salz, Sid C. Smith, H. A. Rynearson, all of Waterloo; Earl Schmidt, Charles City; Paul W. Stump, Oscaloosa. Second row: G. L. McCarten, Dubuque; L. O. Hennings, Davenport; H. J. Lorenz, state treasurer; Adolph Kohler, both of Davenport; Quinn Albright, A. Y. McDonald Mfg. Co.; E. Rosine; E. Hoff, all from Des Moines. Third row: Louis Smid, Wm. C. Miller, both of Cedar Rapids; Robert W. Scheer, president of Contracting Plumbers' Association; D. C. Cunningham, Missouri state president; J. M. Weiler, Missouri state treasurer, all of St. Louis, Missouri. Wilbert Gregory, national organizer of UA; M. J. Andrews, president, Illinois association. Fourth row: R. E. Pauling, Illinois Malleable Iron Co.; Homer S. Yetman, Lead Industries Association; Charles Gawne, Chicago; E. B. Hauser, secretary, Central Supply Association, Chicago; H. J. Bruns, Sioux City; H. N. Labbitt, Iowa vice president, Sioux City; Roy Kirker, past state president, Davenport. Bottom row: George Puffett, Iowa secretary, Ames; Roy Chandler, Chandler Pump Co., Cedar Rapids; J. W. Lundon, Dubuque; Roy Jenkins, Oscaloosa; F. H. Pierson, Iowa state president, Fairfield

TANK FLOATS (2 sizes)

TAIL PIECES (2 sizes)

STOPPERS (7 sizes) SLIP NUTS (4 sizes)

PLASTIC CLOSET SPUDS



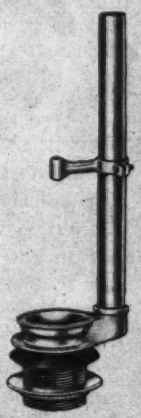
FLUSH ELBOWS (4 sizes)

American "Everlast"

MOLDED PLASTIC

PLUMBING SPECIALTIES

FLUSH VALVE WASHERS (Rubber)



PLASTIC FLUSH VALVES

Most durable because of AMERICAN'S long experience in selection of toughest materials. Corrosion-proof, water-resistant, light, beautiful, easy to install. Sell and use the AMERICAN line with nation-wide prestige.

MORE UNITS COMING

Watch our advertisements. To meet expanding business AMERICAN has taken an additional factory building with vastly increased space.

CONTRACTORS: Order AMERICAN Fittings from your supply house. JOBBERS: Send for samples, or get in touch with American Sales Representatives.

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Mitchell Love.....712-16 No. 16th St. Philadelphia, Pa.

Potter-Roemer Co.....2432 E. 8th St. Los Angeles, Cal.

Clyde Cary.....703 Market St. San Francisco, Cal.

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AMERICAN MOLDED PRODUCTS SALES COMPANY

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SKY POWER WINDMILL PARTS

Bring old Towers to Life Again!

Quick action by Monitor gives wide-awake windmill dealers a welcome chance for cash sales plus income from repairing farm wells. The WPB has authorized the emergency manufacture of WINDMILL replacement parts, pump repairs and cylinders. Monitor has worked at top speed to provide replacement parts for putting thousands of farm wells and windmills back in service.

NO RATION CERTIFICATE is needed for repair parts to put disabled windmills and pumps in good condition. New windmill operating parts may be obtained to work with any make of old tower, if it is specified that the parts replaced are worn out or damaged beyond repair.

Monitor is also providing all possible pumping equipment and well supplies and is backing you with a windmill repair advertising campaign to millions of farmers. Write or wire nearest Baker branch!

Monitor SKY POWER WINDMILLS

WINDMILLS • PUMPS • PUMPJACKS • HAND PUMPS • WELL SUPPLIES

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BAKER MFG. CO.: Minneapolis, Minn.; Madison, Wis.; Fort Dodge, Ia.; Cedar Rapids, Ia.; Fredericksburg, Ia.; Omaha, Neb.; Kansas City, Mo.; Enid, Okla.; Hutchinson, Kan.

AXTELL CO.: Fort Worth, Texas; Amarillo, Texas; Lubbock, Texas; San Angelo, Texas.

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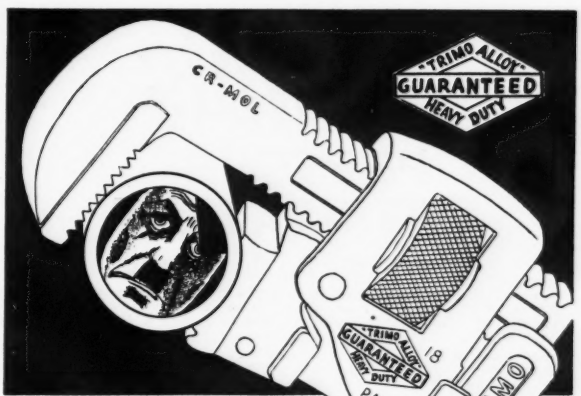

TRIMO is helping "PUT THE SQUEEZE" ON HITLER!

No easy task . . . and UNCLE SAM needs so many "TRIMO ALLOY" wrenches to do the job that we have been forced to curtail production for plumbing, heating, and allied trade.

However . . . because they are made of DROP-FORGED alloy steels, we are confident that you can make your present "TRIMO ALLOY" wrenches last for the emergency. New parts are always available. (Due to War conditions, alloy steel has been restricted for hand tools for the duration.)

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Target FOR TONIGHT

Tonight's target is *any spot in the world* where the American Command chooses to concentrate air power—thanks to miracles of organization and production. ★ Every member of the PAYNE organization is proud and grateful to have a small, yet vital part in supplying the weapons of Democracy. ★ PAYNE'S expanded facilities are now dedicated to this one end. But after the war, we shall be even better equipped to resume our nearly 30 years' leadership in the peaceful science of heating.

TARGET FOR TOMORROW

"Right on the target" of America's post-war expectations is the planning now taking place in PAYNE laboratories and drafting rooms. In the future, as always, PAYNE dealers will offer years-ahead design and performance.

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Payne FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIFORNIA

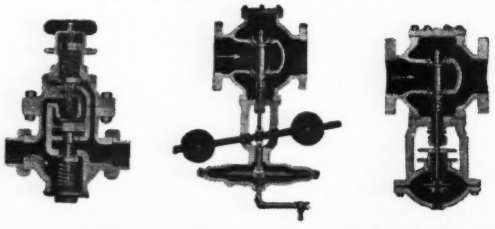
Illinois PRESSURE REGULATORS

for Steam, Air or Gas

Illinois Pressure Regulators are controlling steam pressures, accurately and efficiently, for the Armed Forces from coast to coast in Air Fields, Forts, Navy and Marine Training Centers, Arsenals, Hospitals, and in many war production plants.

The complete ILLINOIS line includes valves for every type of service. They are available in single seat for dead end service, or double seat for continuous flow, and can be furnished in spring loaded, weight and lever or internal pilot type, as service requirements dictate.

Reasonable shipments on suitable priorities
Write for Bulletin No. 107

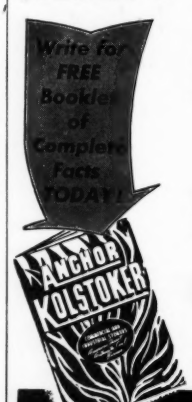


ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO

ANCHOR

COMMERCIAL & INDUSTRIAL STOKERS

READY FOR SHIPMENT!



Regardless of your demand for commercial and industrial stokers to handle anthracite or bituminous coal, ANCHOR can now supply you from regular stock! These famous stokers are available for conversion, replacement or new installation.

America's Finest Automatic Coal Burner!

Anchor, the Symbol of an organization which has manufactured coal burning equipment continuously for over 78 years, is a stoker name you can confidently recommend and easily sell!

For full details, write at once!

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Division of
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COMMERCIAL AND INDUSTRIAL STOKERS

Penna. Holds 49th

A well-rounded program of business, legislative and governmental topics featured the 49th annual convention of the Pennsylvania State Assn. of Master Plumbers, May 11 and 12 at the Penn Harris Hotel in Harrisburg. State officers gave their yearly reports and the convention was addressed by several speakers outside the association.

NAMP Pres. T. W. Merryman, told the members about Washington activities of the national group and emphasized the importance of group action on matters affecting our industry; National Director John Lamond, Philadelphia, also stressed the importance of membership in the national association.

C. E. Wilkinson, Kohler Company; C. C. Lowry, Hajoca Corp.; and B. J. Brooks of the Office of Petroleum Administrator for War were headline speakers.

The roll call of past presidents disclosed that eight were present—Richard Turner, James Lutz, Walter C. Williams, William Logan, William McCarthy, John Galbreath, Wm. C. Schneider and Henry O. Heiser.

Officers elected for the coming year were: Fred Kenneck, Philadelphia, re-elected president; James McStay, Philadelphia, reappointed secretary; Louis Bettwy, Altoona, vice president. The board of directors consists of Wm. Frey, C. B. Weitzel, A. C. Reis and John Miller.

Michigan Yearly

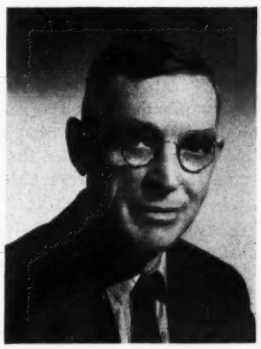
Michigan Association of Master Plumbers held its annual meeting April 28 and 29, at the Hotel Hayes, Jackson. The newly-elected officers for 1943-44 are: George L. Riber, Detroit, president; Albert W. Eurich, Bay City, vice-president; Howard Reed, Jackson, secretary-treasurer; and A. W. Moss (Warren), Peter A. Pipe (Grand Rapids) and Wm. C. Noyes (Lansing), directors. Two hold-over directors are Robert E. Coulton of Detroit and Wm. F. Fischer, Adrian. A. W. Swartz of Grand Rapids, the present journeyman member of the state plumbing board, was endorsed for reappointment.

T. W. Merryman, president of the NAMP and Henry S. Blank, past president of the NAMP were among the featured speakers. Other speakers included Wm. C. Macdonald, Chief of the War Housing Staff-Service Branch, Construction Division, WPB; Harry O. Nelson, president, Plumbing and Heating Industries Bureau, and P. M. Jensen, of the Plastics Division, Dow Chemical Company, as well as other members of private industry and of the state plumbing board.

Obituaries

Joseph W. Hays

Joseph W. Hays, 75, one of the first men to be known as a "combustion engineer" and founder of what is now The Hays Corporation, died April 22 at Grinnell, Iowa. His book, "How to Build Up Furnace Efficiency" is considered by many boiler room crews their operating bible. Mr. Hays entered the industry in 1893 and was an early pioneer in



Joseph W. Hays

fuel economy and smoke abatement. In 1918 he moved his business from Chicago to Michigan City, Ind., where he continued as active head until selling out in 1925. In 1941 he was honored by the American Society of Mechanical Engineers for his work in the field of fuel combustion and economy. He is survived by two daughters and a son, as well as a sister and two brothers.

Adam E. Geddes

Adam E. Geddes, 56, of Philadelphia, died April 28. He was president of the Fowler & Wolfe Radiator Company of Norristown, Pa. He is survived by his widow and one brother.

Frank F. Beyer

Frank F. Beyer, 74, Baltimore, Md., for a number of years secretary of the Association of Master Plumbers of Maryland, died recently. He is survived by his widow and one daughter.

John D. Johnson

John D. Johnson, Philadelphia, died April 28 at the age of 81. He was formerly president of J. D. Johnson Co., Inc. He is survived by two sons and a daughter.

Lewis T. Simmons

Lewis T. Simmons, 63, of Atlanta, Ga., a retired master plumber, died recently. He is survived by his widow, parents, four sisters and a brother.

Patrick J. Gallagher

Patrick J. Gallagher, a well known plumbing contractor of Fairbault, Minn., died recently. He had made many large installations in the state. He was the father of Associate Justice Thomas Gallagher of the Wisconsin Supreme Court.

Fred S. Denison

Fred S. Denison, 56, engineering executive of the Minneapolis-Honeywell Regulator Company, died recently in Minneapolis. His electric motor was the first approved for installation by the Underwriters' Laboratories, and in 1940 he received the National Association of Manufacturers' Pioneer award.

Howard C. Palmer

Howard C. Palmer, sales representative for Standard Tank & Seat Company, Camden, N. J., died recently. Mr. Palmer was well known throughout the plumbing and heating industry having represented Standard Tank & Seat Co. for the past 27 years; for the past ten years he has been district representative covering Eastern Pennsylvania and Delaware.

William J. Crowder

William J. Crowder, 49, heating contractor of Richmond, Va., died recently. His widow and one daughter survive.

Convention Dates

June 1-2-3 — ASRE — Thirtieth spring meeting of The American Society of Refrigerating Engineers; to be held in Cleveland with headquarters at Hotel Statler.

June 7 and 8—ASHVE—1943 summer meeting of the American Society of Heating and Ventilating Engineers; to be held in Pittsburgh, with headquarters at the Hotel William Penn.

June 7-10—NAMP—61st annual convention of the National Assn. of Master Plumbers, to be held in Chicago, with headquarters at the Morrison Hotel.

June 8-11 — SMOKE PREVENTION ASSN.—37th annual meeting to be held in Pittsburgh, with headquarters at Hotel William Penn.

June 9 and 10 — NDHA — 34th annual meeting of the National District Heating Assn.; to be held in Pittsburgh with headquarters at Hotel Schenley.

June 17 and 18—OIL HEAT—First national and organizational meeting of the National Dealer and Distributor Council of Oil-Heat Institute of America, Inc.; to be held in Chicago at the Blackstone Hotel.

June 26-27-28—WHOLESALERS—Thirty-third convention and business meeting of the Plumbing and Heating Wholesalers of New England, Inc.; to be held in Poland Spring, Me., with headquarters at the Poland Spring House.

News of Business . . . . .

Month's Reports

● *Privately-financed construction gains between March and April of 1943.*

The Federal Reserve Index of industrial production advanced an apparent 2 additional points on a seasonally adjusted basis to 205 (1935-39 = 100). It is stated that the usual large gain in output of durable manufactured products had a greater effect on the combined index than the slight gains in both nondurables and minerals. The majority of wholesale prices were said to have risen fractionally. Among the minerals group, it is stated by the Federal Reserve Board that fuels production (seasonally adjusted) has held generally level over the past year. In the first quarter it was one point higher than in either the fourth or the first quarters of 1942. A small decline in crude petroleum output over the year has been approximately offset by a rise in bituminous coal.

According to figures reported to us by 66 key plumbing and heating wholesalers throughout the country, the average percentage of decrease in April of this year as compared to the same month of last year was 37.4 per cent. For the first four-month period of 1943, these same wholesalers have reported an average decrease of 31.2 per cent as against the same period of 1942. Thirty-one of these wholesalers state that they expect business in May of this year as compared to last year to be worse, 21 expect it to remain about the same, six expect an increase and 8 failed to comment. As in the past months, the Pacific States are the only section showing a gain for both April and the four-month period, and of the five reporting wholesalers three expect an increase in business in May. The largest decrease for both April, and the January to April period, was reported by the West North Central States.

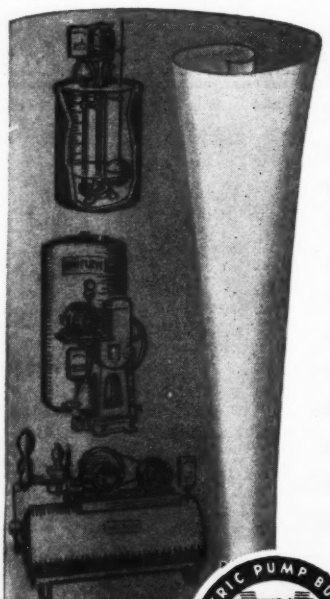
Reports from the Department of Commerce indicate that oil burner shipments in March totaled 7,361 as compared to 14,412 in March of last year. This same source reported shipments of Class 1, 2 and 3 stokers at 1,960 as compared to 10,972 in March, 1942 . . . steel boilers at 1,029 units in March, 1943, as against 2,699 in 1942 . . . range boilers at 58,902, as compared to 62,450 in March of 1943.

BUILDING CONSTRUCTION

According to the Department of Labor, the 19 per cent increase between March and April 1943 in the value of privately financed building construction started in urban areas of the United States practically offset the 20 per cent decline in the value of Federal construction contracts awarded. The decrease of less than 1 per cent in total valuation is in marked contrast to the sharp downward movement of the previous 13 months. The valuation of new nonresidential buildings declined 13 per cent between March and April, while the valuation of new residential building increased 3 per cent and additions, alterations, and repairs to existing structures increased 19 per cent.

It is reported that defense construction has reached its peak and will now continue at a slower pace.

KEEP 'EM PUMPING



Uniflow's fine pump line continues in production although restricted in numbers, types and styles. Write for schedule of available water systems. Plenty of parts available to keep them pumping.

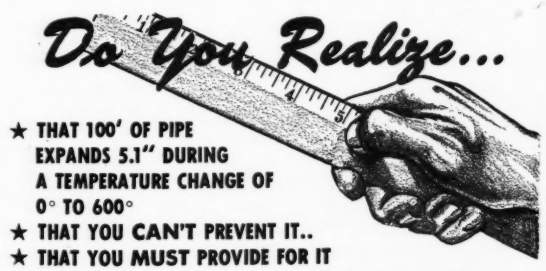
SHALLOW, DEEP AND JET WATER PUMPS AND SYSTEMS

ELECTRIC PUMP BUILDERS — UNIFLOW — FOR 21 YEARS

WATER SOFTENERS
CELLAR DRAINERS
IRON FILTERS

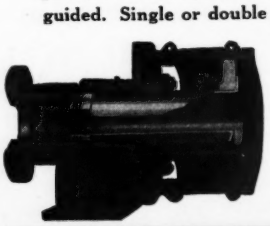
UNIFLOW MFG. CO., ERIE, PA.

Do You Realize...



★ THAT 100' OF PIPE EXPANDS 5.1" DURING A TEMPERATURE CHANGE OF 0° TO 600°
★ THAT YOU CAN'T PREVENT IT..
★ THAT YOU MUST PROVIDE FOR IT

Unless proper provision is made for expansion caused by temperature changes, walls may be pushed out, pipes buckled — apparatus, pipes and fittings broken. With high pressure steam, this may not only be expensive but may stop production. There are ADSCO Joints for both high and low pressure — internally guided — internally-externally guided. Single or double joints with traverses up to 12" per slip. Flanged or beveled ends. With or without base, drip connections, service outlets. Write for Catalog 35DE.



ADSCO Piston-Ring Joint — can be repacked under pressure.

AMERICAN DISTRICT STEAM COMPANY NORTH TONAWANDA, N. Y.

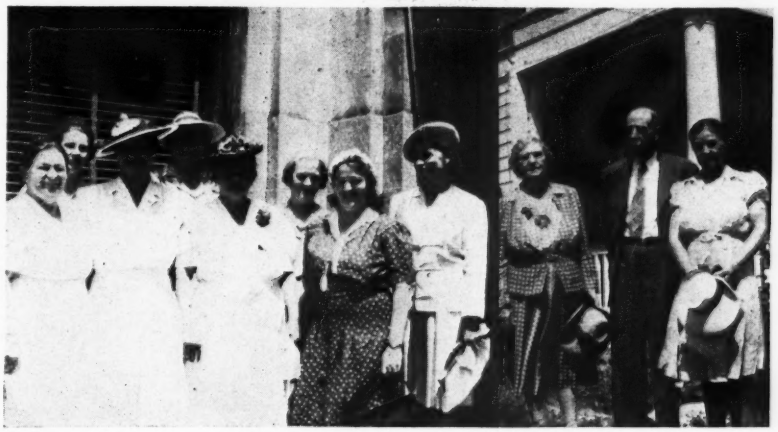
Making "UP-TO-DATE" Steam Line Equipment for over 60 years

News of Women . . . . .

Florida Annual

The Women's Auxiliary of the Florida State Assn. of Master Plumbers held its nineteenth annual convention in Jacksonville May 4, in conjunction with the master plumbers convention.

Mrs. Chester Armstrong, Bradenton, was reelected president, while other officers are: Mrs. L. L. Mears, Miami, first vice president; Mrs. Harry Hauer, Tampa, second vice president, Mrs. Henry Dupree, Jacksonville, third vice president; Mrs. William Dunstan, Leesburg, recording secretary; Mrs. Roy Martin, Miami, treasurer; Mrs. W. E. McAndrews, Tampa, corresponding secretary, and Mrs. Foster Fanning, Winter Park, chairman of the sanitation committee and the essay contest.



Photographs taken at recent Florida Assn. convention. Left to right: Mrs. Henry Griggs, Bradenton, SW District vice president; Mrs. C. M. Hancock, St. Petersburg, treasurer; Mrs. R. E. Martin, Miami; Mrs. L. R. Sheffield, St. Petersburg; Mrs. T. H. Thompson, Jacksonville, NE District vice president; Mrs. Chester Armstrong, Manatee, president; Mrs. S. J. Ferris, Orlando; Mrs. H. G. Dupree, Jacksonville, third vice president; Capt. and Mrs. A. R. McGonigal, Daytona Beach; Mrs. Foster Fanning, third vice president, national auxiliary. (Photos, courtesy Mrs. Foster Fanning.)

Iowa Women Meet

The Women's Auxiliary of the Iowa Master Plumbers Association met at Cedar Rapids on May 3 and 4, in conjunction with the meeting of the men's organization, at the Montrose Hotel.

Members attended several sessions of the master plumbers association, in addition to business meetings of the auxiliary, luncheons and other social functions.

Mrs. Kenneth Hammel of Dubuque was elected president, Mrs. C. L. Cashman of Cedar Rapids, vice president, and Mrs. Walter Frey, Ft. Madison, secretary-treasurer.

Women of the Industry

The Baltimore women's organization known as "Ladies of the Plumbing and Heating Industry" held its annual May party on May 2, at a suburban resort. This organization admits to membership any woman interested in the work of the two men's groups—the Association of Master Plumbers of the State of Maryland, Inc., and the Progressive Master Plumbers Assn. of Baltimore—and who has any connection with the industry.

In attendance at the recent outing of the "Ladies of the Plumbing and Heating Industry" were, left to right, seated: Mrs. Sara Martin, president; Mrs. S. Hankin, vice president; Mrs. Mary Vacek, treasurer; Mrs. Betty Reger, secretary; Mrs. Edith G. Cuffley, chairman of the entertainment committee; Mrs. F. Barker, Mrs. Andy Doerflein. Standing: Mrs. Iris Weems, Mrs. P. German, Mrs. Joseph Walpert, Miss Nellie Sullivan, Chief Insp. Reynolds, Mrs. Norine Ryan, Mrs. Isabelle Reger, Mrs. Eva Hoernlien and Miss A. Reger

Penna. Women Meet

In addition to the usual business activities and election of officers, the Women's Auxiliary to the Pennsylvania State Assn. of Master Plumbers had a full schedule of activity. Dinner, entertainment and card playing at the Moose Club wound up the opening day's activities and the regular dinner dance featured the auxiliary's last-day entertainment. Mrs. Fred Fehl, Allentown, was elected president.

These photographs were taken at the 55th annual convention of the Iowa Master Plumbers Association: Mr. and Mrs. Adolph Kohler, Davenport; Mr. and Mrs. Kenneth Hammel, Dubuque; Mr. and Mrs. C. L. Cashman, Cedar Rapids. Mrs. Hammel is president and Mrs. Cashman is vice president of women's auxiliary

YOU'LL WANT THIS PAPER FOR 6 REASONS . . . . .

1 *Shows interesting unit heater installations*
2 *Tells how to maintain gas unit heater efficiency*
3 *Shows new products*
4 *Gives special news data*
5 *Jokes*
6 *Quick notes from trade papers*

We would like to put your name on our mailing list so you'll receive The Reznor News every month, gratis. You'll look forward to receiving this newsy folder . . . you won't miss an issue . . . it will stimulate you with pictures and news items of industrial achievements. Yes . . . we have beaten Time and Readers' Digest to success stories. The Reznor News is up-to-the-minute—no re-hash, no old stuff. If you are interested in heating, send the coupon, mail a card, or write a letter today.

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MERCER, PENNA.
Gentlemen: Yes, you may send meThe News at no cost and no obligation.

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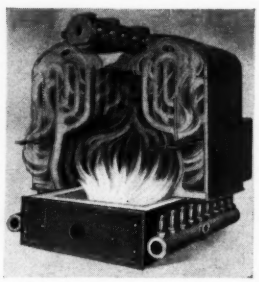
News of Products

Boilers

These cast iron boilers are said to be especially suited for medium pressure work essential to the war effort . . . whether it be for the armed services or for war production.



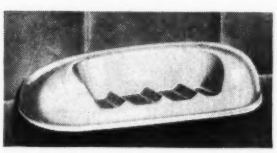
Listed Features: This new line of boilers, rated at from 5 HP to 200 HP, which can be used with steam pressures up to 50 lbs and some up to 75 lbs are constructed of tough gray iron, built for use with any fuel, it is reported by the manufacturer. It is stated that many of the boilers are being operated by the armed services at 30, 40 and 50 lbs steam pressure for sterilization purposes in mess halls and hospitals, and manufacturers of war products are using the boilers for process steam or where high temperature water is required to 300 deg. Each section of the boiler is composed of a large number of comparatively small vertical water tubes.

Manufactured by: The H. B. Smith Co., Inc., Westfield, Mass.

● ● ●

Bathroom Accessories

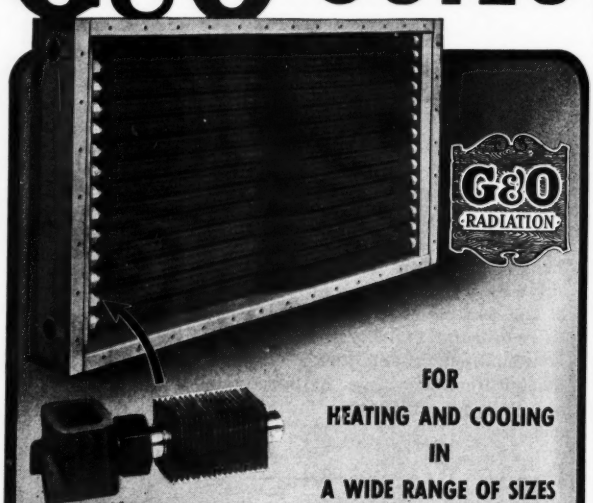
This new line of fixtures and accessories, has been designed from a durability and utility



standpoint, as well as a beauty standpoint, according to the manufacturer.

Listed Features: Accessories

G&O COILS



Detail of mechanical joint used in Universal Heat Transfer Coils.

FOR HEATING AND COOLING IN A WIDE RANGE OF SIZES

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THE G&O MANUFACTURING COMPANY
New Haven, Connecticut
Pioneer Manufacturers of Square Finned Tubing in the United States

Check Fuel leaks in your heating system...

In thousands of heating systems—very possibly yours—there are hidden fuel leaks. You can't see them because they aren't signalled by hissing steam or pools of water. Dirty boilers, worn valves, poorly functioning traps, leaky flanges, water pockets in sagging pipe lines, clogged strainers, pumps that need adjusting, these are unseen but they drain away fuel. Neglect of proper maintenance and operation is akin to sabotage of our National war economy.

The Dunham Organization is dedicated to the principle of "Efficiency *with* economy in heating". We will be glad to counsel with you on tuning up your heating system so that it will make a patriotic contribution to National Security next winter by saving fuel.

Dunham Differential Heating stretches the heat values of steam and advances fuel economies far beyond ordinary concepts. We will gladly send details. Just write to our Chicago office.

DUNHAM DIFFERENTIAL HEATING MAKES FUELS GO FURTHER

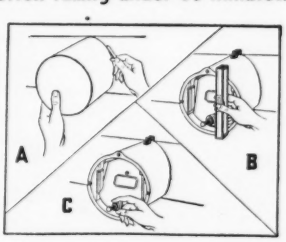
C. A. DUNHAM COMPANY

450 E. OHIO ST. • CHICAGO

TORONTO, CAN. • LONDON, ENG.

LAST YEAR thousands bought Field Draft Controls to save money — 5% to 25% of their fuel bill. NOW — under severe fuel rationing — your prospects will respond gratefully to a NEW sales appeal. HERE are magic words: "A Field Control keeps you WARMER on LESS fuel!" No one must waste fuel; therefore everyone is a prospect. And Field provides complete residential and commercial coverage. There's profit in every easy sale, domestic installations often taking under 30 minutes.

INSTALLATION'S SIMPLE AS A B C



A Hold collar snugly against stove pipe in correct position and mark outline on pipe. Snip hole in pipe ½" smaller than mark; snip slits ½" deep around hole.

B Strap collar to pipe; bend ½" slits into collar. Fasten control into collar and true control up and down and sideways by checking with carpenters spirit level for accuracy.

C Factory balanced, control requires only a simple hand adjustment for the particular installation. Set for minimum draft consistent with combustion and heat demands as required.

FIELD CONTROL DIVISION MENDOTA, ILLINOIS

Where Today's Suburbs End, Post-War Homes Will Begin...

Give Them Safer, Trouble-Free Plumbing With the San-Equip SEPTIC TANK

EVERY sign points that way . . . every authority says it is coming as soon as the war ends . . . the greatest suburban building boom in history. That means homes far beyond sewered areas, and modern plumbing systems that must be connected to septic tanks.

Make these homes safer for health and furnishings. Make their plumbing systems a tribute to modern plumbing skill, and a joy to the home owners. You can do it easily and profitably by recommending San-Equip, the proved septic tank. The tank with the best-known name in the plumbing trade! The tank that has always been sold through the plumbing trade!

SAN-EQUIP, INC.
FACTORIES AT
SYRACUSE, N. Y. CHICAGO, ILL.

As time goes on,

prolonged wartime restrictions permit the structural and operating principle of Chicago Faucets to demonstrate conclusively the reliability and efficiency of their construction. Thus, when normal conditions again prevail, your customer demand for these fixtures will undoubtedly exceed pre-war levels.

The Chicago Faucet plant proudly displays the "Minute Man" emblem, indicating that more than 90 per cent of Chi-Fau-Co workers are investing a portion of their wages in U. S. War Bonds and Stamps.

THE CHICAGO FAUCET CO.
2712 N. Crawford Ave., Chicago

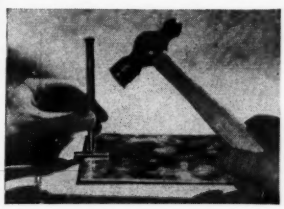
CHICAGO FAUCETS
Last as Long as the Building

included are soap dishes, tooth brush and tumbler holders, towel bar, etc., and fixtures such as faucet handles, radiator valve handles, shower heads, tank floats, etc. Simple, solid, unbroken, upward sweeping lines form the motif of the entire line. As an example, it is stated that the soap dish illustrated here has been given a backward slant to prevent dripping of soap water over edges and walls, and to prevent soap from slipping out of the dish. **Manufactured by:** Eclipse Plastic Industries, Inc., 5151 N. 32nd St., Milwaukee, Wis.

● ● ●

Control

Several changes both in design and installation have made this newly developed damper regulator control especially appealing to heating contractors, according to the manufacturer.



Listed Features: Featuring greater ease in time-saving installation, the control is said to require no bolts, rivets or lugs, and no holes need be drilled in the damper. Each unit is supplied with two drilled holes, tapering from ¼ in. diameter in top segment to ⅛ in. in the lower segment. **Manufactured by:** The Badger Mfg. and Sales Co., 322 East Brown St., Milwaukee.

● ● ●

Faucet Repair Set

This new faucet seat and washer set is said to make a perfect water-tight seal, thus preventing water waste, repair bills, lost heat, annoying drips, etc.

Listed Features: The new brass lining feature of this all-in-one faucet seat and washer is said to prevent shrinking and to assure a steady flow of water. It is also stated that it expands and locks tight in the faucet . . . can be used for either hot or cold water . . . and elimi-

No PIPE JOINT COMPOUND COMPARES with X-PANDO —for ALL USES

Used by U.S. Navy • U.S. Maritime Commission • U.S. Coast Guard • U.S. Army • U.S. Army Air Corps •

EXPANDS AS IT SETS—one formula for all uses—economical, goes 6 times further—holds anything carried in metal pipe except certain heavy acids—expands and contracts with pipe movement—joints easily taken apart—the expansion corrects imperfect threads—smooths flange faces—withstands deflection, sharp temperature changes—vibration and pressures—better than litharge and glycerine for all uses. The standard compound for industry and shipbuilding.

DISTRIBUTORS EVERYWHERE

X-PANDO CORPORATION
43-15-36th Street Long Island City, N. Y. STillwell 4-7180

McDONALD

SINCE 1856!

In the 87 years that McDonald has made pumps, we have seen America emerge victorious in three major wars. Today we are in our fourth war and as in the past, we are doing our job on the production front. Tomorrow, in a new and stronger America, McDonald Water Systems will play an even greater part in the American way of life.

AUTOMATIC WATER SYSTEMS
"FAMOUS FOR SERVICE"

DEEP WELL
SERIES 400 and 600
Extra rugged, simple, compact. Skillful, modern engineering provides complete accessibility of entire mechanism. Patented, positive lubricating system means longer life and quiet operation.

SHALLOW WELL
SERIES 420
Simple, accessible, famous for features and performance. A leader in the Water System field.

RUNNING WATER

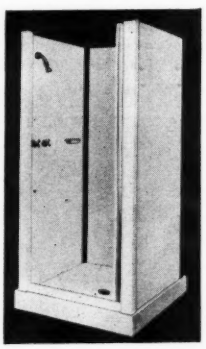
A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA

nates screw and washer.
Manufactured by: Keystone Brass & Rubber Co., Inc., Broad St. and Lehigh Ave., Philadelphia.

● ● ●

Shower Cabinet

Answering the need for both vastly increased bathing facilities and conservation of materials, this new cabinet shower is said to contain less than 1 lb of metal.



Listed Features: The cabinet is fabricated and designed for quick assembly in war housing projects, remodeled war housing, army posts, naval bases, war plants, etc. A distinctive feature is the plastex receptor which, it is said, combines beauty and comfort with greater strength, durability and lighter weight. The standard color for the receptor is pastel green. Two other colors—buff and coral—are available on special order. The walls of the cabinet are of ⅛ in. smooth, hard pressed fibre board, finished inside and outside with two coats of white high-temperature baked enamel. It is 32 in. square and 75 in. high, with total shipping weight being 200 lbs.
Manufactured by: Henry Weis Manufacturing Co., Inc., Elkhart, Ind.

● ● ●

Combination Unit

Complete pressure protection is provided, it is said with this one unit.
Listed Features: It is said that the one unit combines the relief valve and the safety head or emergency relief device. According to the manufacturer,the safety head isolates the relief valve from corrosive or gummy contents of the pressure vessel—further, when the diaphragm of "safety head" is burst by overpressure, the "conservation" relief valve blows until pressure drops to normal, then closes to conserve contents of vessel.
Manufactured by: Black, Sivalls & Bryson, Inc., Kansas City, Mo.

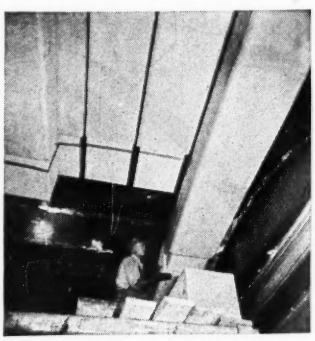
TIME OUT
FOR RECONDITIONING

As long as Tuthill Pumps and Fuelstats are needed for war requirements, users on the home front will continue to rely on their present equipment to fill their heating needs. That is why it is more important than ever to take advantage of the summer season to repair and recondition your pumping equipment. You can look to Tuthill's service, either at our authorized field service stations or at the factory to maintain dependable, "like-new" performance for next winter.

TUTHILL PUMPS ARE SERVING
ARMY • NAVY • AIR FORCE • MERCHANT MARINE ★

TUTHILL PUMP COMPANY
939 EAST 95th STREET • CHICAGO, ILLINOIS

Careyduct in new studios of radio stations WLW and WSAI.



Eliminate
METAL DUCTS in AIR CONDITIONING
specify

Careyduct
THE ALL-ASBESTOS INSULATED DUCT

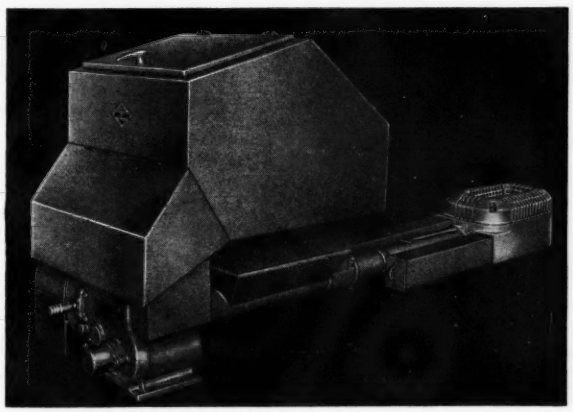
Steel will help win battles and by using CAREYDUCT, the all asbestos duct, you conserve steel needed for vital war production.

It has been demonstrated in hundreds of installations that the use of CAREYDUCT means greater efficiency . . . quieter operation . . . lower friction . . . lighter weight . . . easier installation . . . and actually lower cost than insulated metal.

Write for full information. Address Dept. 18.

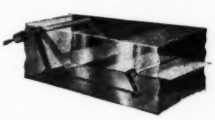
THE PHILIP CAREY MFG. COMPANY • Lockland, Cincinnati, Ohio
Dependable Products Since 1873
IN CANADA THE PHILIP CAREY COMPANY, LTD. Office and Factory, LENNOXVILLE, P. Q.

WILL-BURT Commercial STOKERS



Meet the Demands of Wartime Heating

Nothing like coal for availability and reliability, and nothing like a Will-Burt Stoker to burn it. For fourteen years Will-Burts have set the standard of dependable automatic heating, and that standard is being inflexibly upheld today.



Will-Burt Automatic Air Control — the greatest improvement ever made in domestic and commercial stokers.

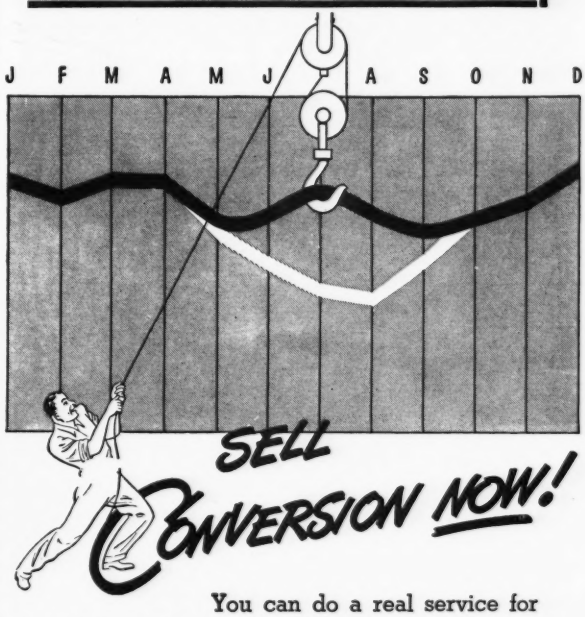
We are producing Will-Burts in sizes for commercial, apartment and public buildings, having the approval of the War Production Board.

Write for particulars. Dealerships in some territories are open for representation.

Air Controlled WILL-BURT STOKER

THE WILL-BURT CO.
STOKER DEPARTMENT
ORRVILLE · OHIO

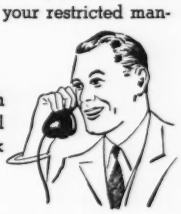
Block That Summer Slump



You can do a real service for your customers (and incidentally, do some real business for yourself) by tying-in with the government's appeal to reduce oil consumption.

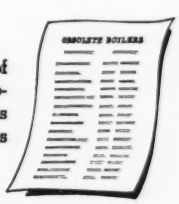
● All advices indicate that the fuel oil situation will be no better—*and may be worse*—next season. Many users will have to shift—or shiver!

● Don't wait for fall to flood you with more rush jobs than you can handle—urge conversion now! Spread the work—make full use of your restricted manpower.



● Phone—call—or write prospects with oil burners. Sign them up now, so you'll have time to order parts and do the work before the first cold snap.

● Block that summer slump, make summer pay its way. A conversion campaign often uncovers profitable repair jobs that help pay the overhead.



● If you do not have National's list of trade and manufacturers' names of obsolete boilers for which we have parts available, ask for it now. You'll find this conversion aid a helpful service.

THE NATIONAL RADIATOR COMPANY
229-C Central Avenue
Johnstown, Pennsylvania

Dealers who stay in business deserve help!

...and Deming is Helping

Deming Dealers are performing a vital wartime service. Located in close proximity to farming areas, they are helping farm owners keep water systems in operation. When repair parts are needed the Deming Dealer meets that need. Where special service is required, the Deming Dealer is right there to cooperate.

Dealers who stay in business under today's difficult conditions deserve help. Deming is doing everything humanly possible to help them.

THE DEMING CO. • SALEM, OHIO

DEMING WATER SYSTEMS

Keep 'em pumping

REMINDER...

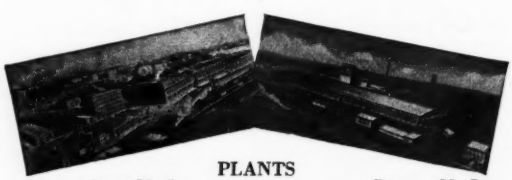
If You Haven't Yet Received Your Copy, Send for This Valuable Hand-Book Today!

"A great help on the job" . . . that's what the plumbing industry has to say of the pocket-size KOVEN Plumber's Handbook. As a ready source of clear, concise working data and a reliable reference for quality products . . . the new 1943 edition will prove most useful to you. Notify your jobber or KOVEN direct and it will be mailed to you promptly.

Among the many KOVEN products are:

RANGE BOILERS Copper
SCULLERY SINKS
KOVEN-PARACOIL TANKS
BARBER BOILERS
WATERFILM STEEL BOILERS
For Automatic Firing

STORAGE TANKS
Steel or Copper
FUEL OIL TANKS
EXPANSION TANKS
PNEUMATIC TANKS
SEPTIC TANKS



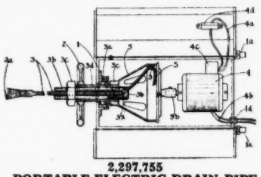
PLANTS
Jersey City, N. J. Dover, N. J.

L. O. KOVEN & BRO. INC.
JERSEY CITY, N. J.

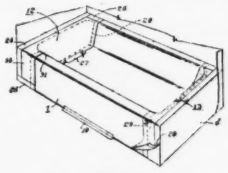
News of Patents

2,297,755. Portable Electric Drain-Pipe Cleaner. Conrad W. Faust, Louisville, Ky.

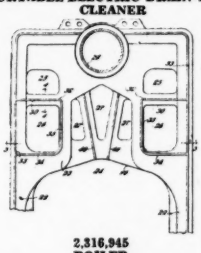
2,319,603. Bathtub Protector. Robert E. Henry, Pittsburgh, Pa.



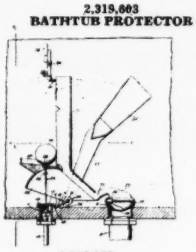
2,297,755
PORTABLE ELECTRIC DRAIN-PIPE CLEANER



2,319,603
BATHTUB PROTECTOR



2,316,945
BOILER



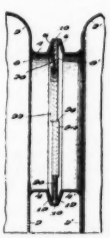
2,318,978
FLUSH TANK

2,316,945. Boiler. Franklin A. Ferguson and Edgar C. Desjardins, Westfield, Mass., assignors to The H. B. Smith Co., Inc., Westfield, Mass.

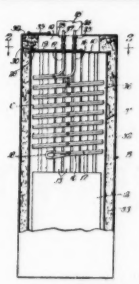
2,318,978 Flush Tank. Albert H. Tow, Atlanta, Ga., assignor of one-half to Frank B. Slupesky, Indianapolis, Ind.

2,319,518. Pipe Joint or Coupling. Charles R. Rau, Chattanooga, Tenn., assignor to Samuel Stamping and Enameling Co.

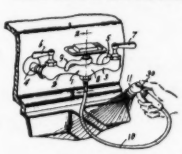
2,318,913. Water Heater. Loyd I. Aldrich, Wyoming, Ill.



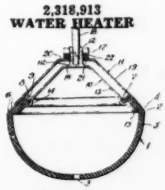
2,319,518
PIPE JOINT OR COUPLING



2,318,913
WATER HEATER



2,314,071
PRESSURE CONTROL FITTING



2,319,256
TANK BALL

2,314,071. Pressure Control Fitting. Ernest H. Bucknell and Ralph E. Bletcher, Los Angeles, assignors, by mesne assignments to Modern Faucet Co., Los Angeles.

2,319,256. Tank Ball. John J. O'Hare, Ridgefield, Conn., assignor to American Rubber Products Corp., New York City.

NEW WASHINGTON STATLER

Chooses

LAWSON CABINETS

A few short weeks ago the new Hotel Statler in Washington, D. C., opened its doors—the newest and most modern hotel in America. Designed for tomorrow, it represents the ultimate in hotel planning.

The F. H. Lawson Company is proud to have been chosen to manufacture the bathroom cabinets for the Hotels Statler Company, Inc. One of the many unusual features of these specially designed cabinets is a completely new and novel lighting system.

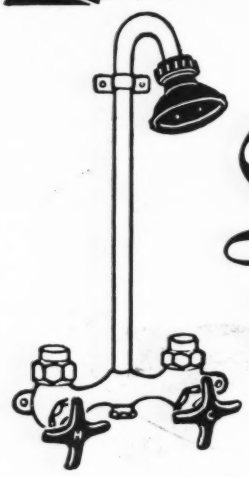
When Victory is won, Lawson will again turn to the manufacturing of bathroom cabinets, and you can be sure that the finest cabinets obtainable will bear the name of Lawson.

THE F. H. LAWSON COMPANY
Bathroom Cabinet Division
CINCINNATI, OHIO

Lawson BATHROOM CABINETS
127 YEARS OF QUALITY Lawson

BUY WAR BONDS for Victory!

100% ENGAGED IN WAR PRODUCTION



DEPENDABLE *Speakman*

SV-2021 "VEE-LINE" EXPOSED TWO-VALVE SHOWER

Completely Meets Specification Type P-19 Spec. PE-623*

SPEAKMAN Vee-Line Exposed Two-Valve Shower, ½" female couplings to take supplies from above or below. Gooseneck riser with wall support and SP-2400 rigid plastic Adjusta-Spray Head (Corrosion-resistant and unaffected by extremely hot water—Self-Cleaning—Discharges full invigorating cross spray). Valve center furnished with cast integral wall lugs which provide essential rigidity in installation. Ferrous valves with renewable brass units and seats. Plastic handles.

***PLUMBING FIXTURES EQUIPMENT SPECIFICATION PE-623 REVISED MARCH 4, 1943**

ITEM P-19 SHOWER FIXTURES: Each shower fixture shall consist of a combination supply fitting with union connections, an exposed riser and a shower head. The valve fitting shall be tapped in the center both top and bottom to permit reversing of supplies and draining of shower riser, and one of the tappings shall be provided with a plug. The exposed riser to the shower head shall be formed from a pipe not less than twenty-four (24) inches long. The shower head shall be ferrous metal or plastic. Plastic shower heads shall be made of a phenol-formaldehyde compound. Plastic shower heads shall withstand without distortion of any kind, cracking, or impairment of serviceability, a test consisting of submerging in hot water at a temperature of one hundred eighty-five (185) degrees Fahrenheit for thirty (30) minutes while the shower head is subject to an internal pressure of twenty-five (25) pounds per square inch. Plastic shower heads shall have face plates which can be partially but not fully removed so as to flush the head for cleaning. All shower heads shall deliver an even, full shower, having approximately a two (2) foot spread in a six (6) foot drop when using not more than six (6) gallons of water per minute at a supply pressure of twenty-five (25) pounds per square inch. A shower head that delivers a hollow circular spray with a dry center, will not be acceptable. Each shower fixture shall be provided with means for rigid attachment to wall both at the valve fitting and at the top of the exposed riser just below the gooseneck. The hot and cold water supply risers are not required to be furnished as part of the shower fixtures.

For full information on Speakman "Vee-Line" Fixtures conserving critical materials write:

SPEAKMAN COMPANY · WILMINGTON, DELAWARE

News of Sales Aids

Specialties

Type of Literature: A "victory" catalog, size 8½ by 11 in. with the company's products displayed on the front cover, which is attractively done in red, white and blue.

Listed Features: A visible index page makes every product page easy to find. Just a few of the items illustrated (together with dimensional and specification tables) are the spring wing toggle bolts, one piece toggle bolt, lead expansion anchors, expansion shields, various hanging devices, sink and stove bolts, lag screws, etc. List prices on the various items are also given. **Issued by:** The Paine Co. 2947-51 Carroll Ave., Chicago.

● ● ●

Tubing and Fittings

Type of Literature: A 6-page 8½ by 11 in. folder. **Listed Features:** This literature gives complete data on plastic tubing and fittings which are now available in a large assortment of sizes. Information is given as to the various applications of both the tubing and fittings, accompanied by illustrations of both. One page is devoted to technical data and physical properties of the plastic . . . another page is devoted to charts, one showing relation of bursting pressure to temperature, safe working pressures for the plastic tubing, etc. **Issued by:** Elmer E. Mills Corp., 812 W. Van Buren St., Chicago.

● ● ●

Boilers

Type of Literature: A 3¾ by 6¼ in. booklet entitled "Plumbers' Handbook." **Purpose:** To assist contractor in specifying for his require-

MODEL NO. 1000

NEW and IMPROVED *Universal*

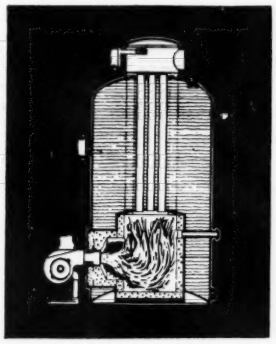
FLUSH TANK LEVER

- SINGLE ACTION
- FITS ANY TANK
- QUICKLY INSTALLED
- LOW PRICE
- PATENTED

In **appearance, in assembly, in design,** the new UNIVERSAL flush-tank lever is streamlined for modern tank installations. All metal construction, corrosive resistant. Handle finished in white high-baked synthetic enamel. Over a half million in use.

CRAMPTON MFG. CO., HOLLAND, MICH.

Hot baths *for* Uncle Sam's Army *and* Navy *from*



AQULUX
Heavy Duty
WATER HEATERS

Hot water builds military morale. Uncle Sam is supplying it as generously as possible at American camps and posts throughout the world.

It is a matter of pride to us that Johnson-built Aqulux Water Heaters have been chosen for so many of these government installations.

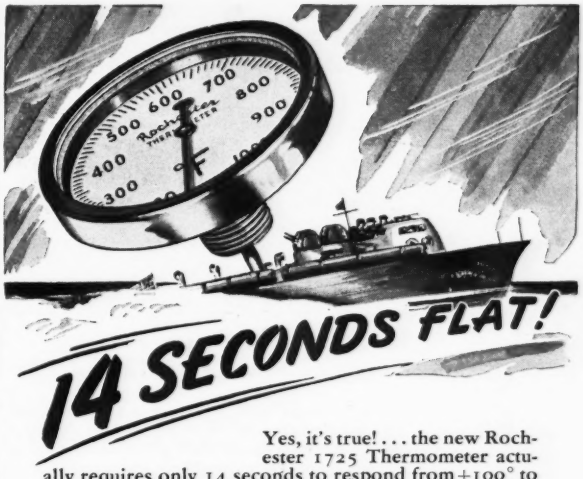
The exceptional performance and fuel-economy of Aqulux Heaters was a determining factor in their selection. Government procurement officers were guided by the *80% Efficiency Rating*, the *rapid recovery* and the *low operating costs* we have achieved in these unjacketed, uninsulated, ungalvanized wartime models.

Though virtually all of our capacity is being devoted to these government orders, we are endeavoring whenever possible, to take care of the needs of essential private industries.

If you have a water-heating or oil-burner problem, we will gladly help you with all the manufacturing facilities and engineering experience at our disposal.

S. T. Johnson Co., 940 Arlington Ave., Oakland, Calif., and 401 No. Broad St., Philadelphia, Pa.

S. T. JOHNSON CO.
40 years of engineering and building fine Oil Burning Equipment

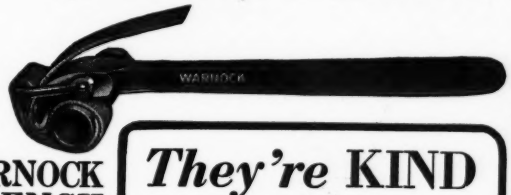


Yes, it's true! . . . the new Rochester 1725 Thermometer actually requires only 14 seconds to respond from +100° to −20° Fahrenheit. Fast action? . . . we'll say it is! But it's typical of the things we are doing to help make America's fighting equipment the most efficient in the world.

And while Rochester Thermometers of this type are serving Uncle Sam on land, on sea and in the air—they're also ready to serve American industry wherever accurate, dependable temperature indication is required. Perhaps some of the customers you are now serving are in need of such an instrument. If so, we will be glad to send you complete information upon request.

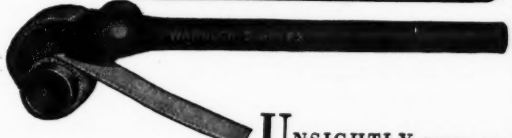
ROCHESTER MANUFACTURING COMPANY, Inc.
19 Rockwood St. • Rochester, N. Y.

ROCHESTER *Individually Calibrated* **GUARANTEED ACCURATE INSTRUMENTS**
FOR ACCURATE LIQUID-LEVEL, PRESSURE and TEMPERATURE INDICATION



WARNOCK WRENCH
Improved type. Drop forged shackle. Strap has three wearing positions. Simple to adjust. A tool for the man who has constant use for a strap wrench.

They're KIND *to* POLISHED PIPE AND TUBING



WARNOCK SIMPLEX WRENCH
Simplest of strap wrenches. Consists of a handle, strap and wedge. Both ends of strap can be used for double wear. This tool is for the man who has only occasional use for a strap wrench.

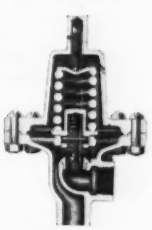
UNSIGHTLY mars on nickel plated or highly polished brass pipe and tubing can ruin the appearance of the finished job! Handle this type of work quickly and easily and, at the same time, protect it throughout installation with a WARNOCK Strap Wrench. Soft strap contact will not scratch . . . curved nose eliminates crushing. Unbreakable handle, finished in enamel, always looks new.

Order one or several WARNOCK Strap Wrenches from your wholesaler today.

Warnock Mfg. Co., Worcester, Mass.

HOME PROTECTION IS VITAL

It doesn't take an air raid to wreck a house. When an unprotected hot water tank "lets go" there is plenty of damage . . . The best way to assure protection from such hazards is to install a MUELLER RELIEF VALVE in EVERY domestic water system. This valve, by means of the EXCLUSIVE Auxiliary Spring Seating Principle, will open instantly when excessive pressures are reached, and will close positively when the pressure has dropped,— operating to within 5% of the pressure at which it is set . . . Protect your customers with MUELLER Relief Valves . . . If you don't know about the many MUELLER features, ask your jobber or write Dept. P-4.

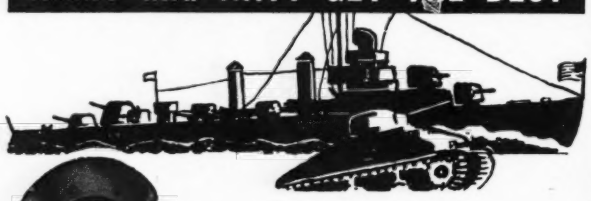


★

H-9045

MUELLER CO. DECATUR, ILL.

ARMY and NAVY GET THE BEST



FIRST In The Field

GENUINE BARNES PIPECUTTERS

To make sure that our fighting Forces get the best tools possible to help them do their job . . . Tools must first pass the strictest kind of tests to prove their fitness. Tested quality . . . speed . . . accuracy are the reasons why GENUINE Barnes Pipe Cutters and Wheels are used extensively in The Armed Service today!

These same qualities have made GENUINE Barnes Cutters and Wheels the top-ranking choice of the industry for more than 60 years. These qualities make it important that you place GENUINE Barnes tools at the top of your re-equipment list to be secured when available.

Prices will be furnished upon request.

The BARNES TOOL CO., Inc.
NEW HAVEN, CONN.

Lochinvar

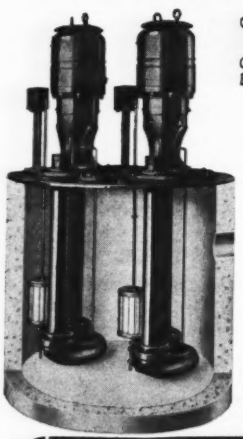
. . . The Name That SERVES In WAR and PEACE!

It is altogether fitting and proper that LOCHINVAR should serve the nation in times of war as it has served the dealer and his customer in times of peace . . . full-heartedly and with the utmost cooperation. LOCHINVAR production facilities are giving Uncle Sam the same unfaltering, trouble-free service on essential jobs that they have long given to our domestic needs . . . the same performance that has made the name LOCHINVAR one of the foremost of its kind . . . and the type of performance that will make LOCHINVAR products sought-after in the peace to come.

MICHIGAN TANK & FURNACE COMPANY
Lochinvar Products Division
14101 Prairie Avenue Detroit, Michigan

Lochinvar
AUTOMATIC OIL BURNING WATER HEATERS

Built for HEAVY DUTY!
★ *NON-CLOGGING and SCREENLESS!*



Economy
SEWAGE AND SUMP PUMPS

Highly recommended for domestic and industrial sewage.

- Single or duplex units with drop pipe suspensions to suit any depth basin.
- Smooth, clear passage in case to allow solids, rags, etc. to pass.
- Perfect alignment assured because all parts are registered.
- Capacities 50 to 4000 GPM with heads up to 120 feet.

Economy Pumps are built to give satisfactory service under all conditions. Write for details today.

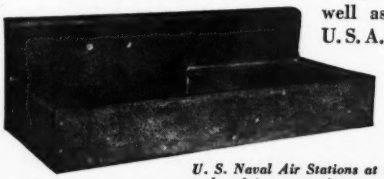
Economy TYPE SCV PUMP

Medium priced, capable, quiet pump for clear liquid service. Services from 10 to 500 GPM with heads up to 225 feet. Write for Catalog D2-1042 for complete details.

Economy Pumps Inc.
1013 WELLER AVE., HAMILTON, OHIO

NEED PHOTO-DEVELOPING TANKS OR SINK EQUIPMENT *in a hurry?*

There is no shortage of Grade 25 Alberene Stone. Your requirements can be supplied immediately. National Bureau of Standards tests have shown that Grade 25 is unaffected by hypo. The supply of this stone is practically inexhaustible, and our machine capacity has been considerably increased, so that the emergency finds us equipped to fabricate and deliver needed tanks, sinks and other equipment promptly. We are shipping quantities of tanks and battery-room sinks to both Army and Navy Air Schools and Bases in outlying possessions as well as on continental U. S. A.



Alberene Stone Corp. of Va.
419 4th Ave.
New York

U. S. Naval Air Stations at various points in the U. S. and outlying possessions are using Alberene Stone Sinks of this type, with and without drainboards and highbacks.

ALBERENE
STONE SINKS • TRAYS

ments. **Listed Features:** Comprehensive data is given on the company's complete line of range boilers, and such products as solar tanks, galvanized steel expansion tanks (both closed and open system), barber boilers, marine tanks, pneumatic tanks, storage tanks, etc. Included throughout the booklet are numerous diagrams, illustrations, and size and specification tables, as well as installation instructions, etc. An alphabetical index simplifies locating a particular product. **Issued by:** L. O. Koven & Bro., Inc., 154 Ogden Ave., Jersey City, N. J.

• • •

Propeller Fans

Type of Literature: An attractive, 8½ by 11 in. booklet. **Purpose:** Announces the new, complete line of propeller fans now in production. **Listed Features:** Complete information, dimension and performance tables are included for the new fans: (1) the standard direct drive fans, are available in 18 sizes with wheel diameters from 10 to 48 in; (2) high powered direct drive fans for use against resistance pressures — 16 sizes with wheel diameters from 12 to 48 in.; (3) standard and high powered belt drive fans —6 sizes with wheel diameters from 24 to 54 in. The new propeller fan design features a non-metallic panel which, it is said, contributes to quieter operation . . . longer service life . . . and easier installation. Totally enclosed motors are used on all direct drive propeller fans. Typical chapters in the booklet are "Importance of Ventilation and Its Advantages," "Selection and Application," etc. **Issued by:** Autovent Fan and Blower Division, The Herman Nelson Corp., 1805-27 N. Kostner Ave., Chicago.

• • •

Glass Tubs

Type of Literature: A four-page, illustrated folder. **Listed Features:** Information is given on the new shower-tub combination of structural glass which has been developed to meet a need arising under wartime building conditions. It is stated that it is especially adaptable where children are too young to use showers, and a tub of some sort is required. According to the manufacturer, virtually no critical materials are involved in its construction, and five pieces of the reflective glass form the tub enclosure and bottom. Also given is a complete list of the branches in various cities through which these glass tubs are available. **Issued by:** Pittsburgh Plate Glass Co., Pittsburgh, Pa.

THIS TOILET SEAT

THE NEW San DURO ALL-PLASTIC

REQUIRES NO

REPAIR or REPLACEMENT . . .

Permanence and *economy* are two important advantages of this new San DURO All-Plastic Toilet Seat. The FIRST cost is the LAST, for this one-piece Plastic Seat will last practically a lifetime without repair or maintenance expense. It's strong, yet light in weight. . . . The lustrous satin-smooth surface is PERMANENT, moisture-proof, acid-proof, impervious to oil, alkalies—will not warp. The ideal, long-lasting Toilet Seat for public buildings, factories, hospitals, schools, apartments, institutions. Three models fit all standard bowls.

See Your Dealer or Jobber, or Write for DESCRIPTIVE LITERATURE and PRICES on the New San DURO Toilet Seat and other San DURO Plastic Plumbing Accessories.

Eclipse ECLIPSE PLASTIC INDUSTRIES

5153 NORTH THIRTY-SECOND ST. • MILWAUKEE, WIS.

A lot of people who are putting their money into War Bonds today, are going to build new homes or remodel old ones with that money when the war ends.

These people who are planning their homes, are going to read about the improved Ball Bearing Faucets that Sherman is designing. They are going to want the new Sherman features of design. They are going to insist upon the exclusive Sherman Ball Bearing construction that makes possible a 12-months' guarantee against leakage.

Better plan now to sell the best line of Faucets on the market—the Sherman Ball Bearing line.

H. B. SHERMAN MFG. CO.
Battle Creek Michigan

Sherman
BALL BEARING FAUCETS

The MARSH TRI-TROL REGULATOR

Saves this fuel waste for Uncle Sam

—and EARNS BIG PROFITS for YOU

- Actual records show fuel savings of 15 to 20%.
- No priorities required to buy the Tri-trol.
- Available immediately—Shipped from stock.

Sales helps and mailing pieces are ready. Act today—to cash in on this timely money making and fuel saving campaign.

Marsh Tritrol Company
600 S. Michigan Avenue
Chicago, Illinois

COUPON BRINGS FACTS

Gentlemen:

Send me all details on how the Marsh Tri-trol Regulator will save fuel for Uncle Sam and earn big profits for me.

Individual .....

Business .....

Address .....

I.C.I. Program . . .

(Continued from page 84)

The Indoor Climate Institute (I. C. I.) contemplates the issuance of identification seals; the national organization to present them to manufacturers of automatic heating and air conditioning equipment meeting I. C. I. standards; the local organizations to present them to installing dealers and contractors handling work in accordance with the best established local practice. It is expected that equipment standards will be established by the various associations now doing a vast amount of research work on problems of this kind and that installation standards will be set according to the best local practice, to meet all safety codes and ordinances.

Local bureaus established under the national Indoor Climate Institute program will provide a consulting service for home owners, dealers, contractors, architects, engineers, and builders. The local bureau will check plans to see that the heating system is to be installed according to the best known practice, and advise people interested as to necessary changes.

Meetings will be held in all principal cities to acquaint the local trade and building interests with the ICI program. These meetings will be conducted by field specialists employed by the national organization and will serve to raise the standards of the entire heating industry.

To interest a higher type of personnel in heating work in the post-war era, the Indoor Climate Institute will cooperate with the national associations in the issuance of manuals and training courses used in the industry. The Educational Director of ICI will also seek to establish training courses at colleges, universities, night schools, Y. M. C. A. schools, and with other educational institutions. It is expected that the splendid work now being done at the University of Illinois and at Michigan State College can be expanded to many other educational institutions.

The national ICI office will issue publicity that can be used in national magazines, newspapers, and by the business press. Local organizations will also serve as centers for issuing publicity that will be of interest to the local press. All campaigns will be carefully prepared to give the people complete information about improvements that have been made in indoor comfort.

No More Damage from Condensation of Sweating Pipes, Tanks, Walls, Ceilings and Air Ducts

NO Drip **A SURE CURE**

● This sensational plastic cork coating prevents condensation drip from metal, concrete, brick, wood, plaster or composition surfaces. Permanently protects metal against rust and corrosion, thus prolonging life of pipes, tanks, etc. Forms a moisture-proof, insulation type coating impervious to acid and alkali.

Stucco-like finish requires no maintenance. A gallon covers about 30 feet of ½" pipe. Dries in 24 hours. Comes in 1, 5 and 55 gallon drums.

Immediate Shipment. Order from your Supply House.

FREE *NoDrip Handbook. All about Condensation Drip and its Prevention.*

J. W. MORTELL CO.
Technical Coatings Since 1895
534 BURCH ST. KANKAKEE, ILL.

Flexibles

HELP SCARCE?

Save Both Time and Labor with FLEXIBLE tools

Sewer and pipe-cleaning service is one of the necessary jobs that can't be neglected—even in war time.

With FLEXIBLE plumbers' tools you can remove stoppages and clean lines quicker, better and more economically. Now, when labor is scarce, conserve both manpower and critical materials by keeping present plumbing in good order with FLEXIBLE tools.

FLEXIBLE SEWER-ROD EQUIPMENT CO.
9059 Venice Blvd.
Los Angeles, Calif.
401 Broadway, New York
Pickwick Building, Kansas City, Mo.

MADE FOR LONG RUGGED SERVICE

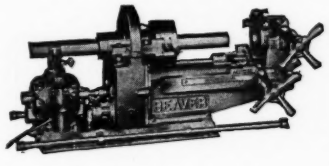
Boiler Tube Cleaners, Flue Brushes, Wire Heater Brushes, Handy Cleaner Brushes, Fire Brooms, Track Brooms.

Tempered Steel

The Worcester line is complete.
Catalog gladly sent upon request.

WORCESTER BRUSH and SCRAPER CO.
10 AUSTIN STREET :: WORCESTER, MASS.

The A-B-C of Pipe and Bolt Machines

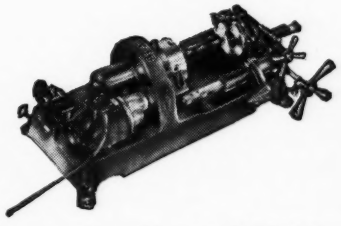


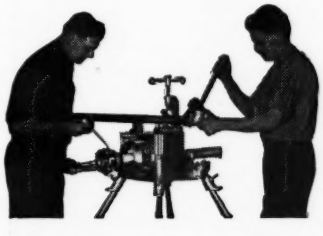
Beaver Model-A

A high-speed heavy-duty deluxe Pipe and Bolt Machine. Range ⅛ to 2-inch—up to 12-inch with geared tools and drive shaft. Bolts, ¼ to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.

Beaver Model-B

A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range ⅛ to 2-inch—up to 8-inch with drive shaft and geared tools. Bolts up to 1½-inch. Wt. 280 lbs. Ask for Bulletin-B.





Beaver Model-C

A sturdy little Power Unit

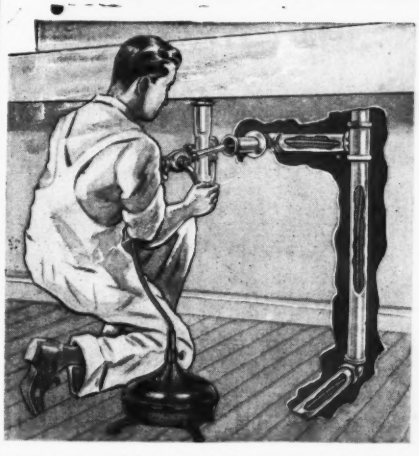
Converts Hand Pipe Tools into Power Tools from ⅛ to 8-inches. Threads 8-inch in 6 minutes. Threads bolts up to 1½-inch. Equipped with automatic chuck wrench ejector — a safety feature. Two men can use it at the same time without interference. Easily portable—weighs about 150 lbs. Write for Bulletin-C.

BEAVER PIPE TOOLS

A Complete Line — Hand and Power!

643 DOME AVE. WARREN, OHIO

TODAY! *Get Equipment That Will Last!*



O'Brien CLEANOUT TOOLS

..Last Longer

..Save Time

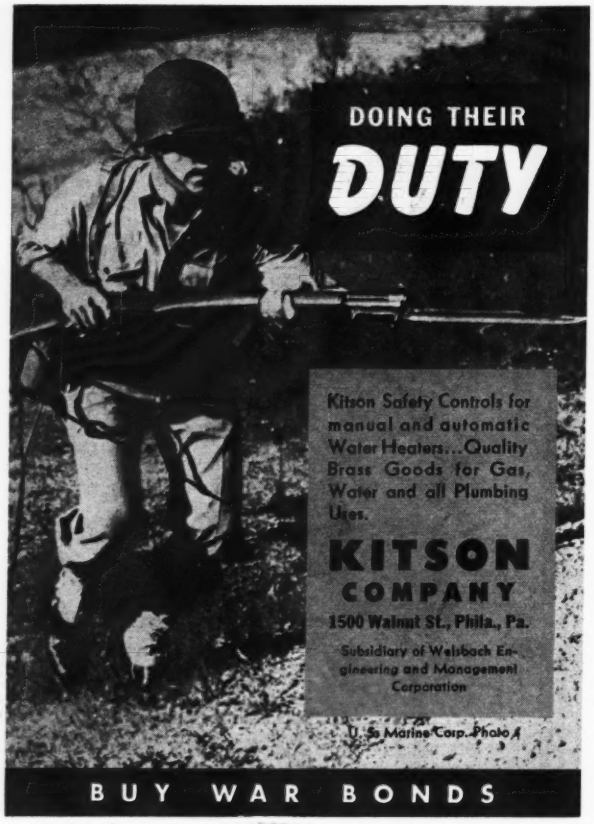
..Save Money

..Save Labor

It is only good judgment today to secure the best cleanout tools available . . . with wartime restrictions . . . labor shortage . . . and the necessity of making tools last as long as possible!
Get the O'Brien Cleanout Tool now! This high-speed, gear-driven gun whirls the strong, flexible cable of high-grade music wire through all bends, angles, traps and elbows . . . cuts right through stoppages in a hurry. It keeps floors clean, too, because the soiled rod is always reeled INSIDE the rust-resisting container!
O'Brien Cleanout Tools are used in all kinds of military and civilian rodding jobs, and by leading plumbers everywhere! You can profit through their use . . . write for details today! Early shipping dates assured in all size sewer rods.

O'BRIEN MANUFACTURING CO. Dept., C, 1505 So. Crescent Avenue
Park Ridge, Ill.

O'Brien CLEAN OUT Tools


DOING THEIR
DUTY
Kitson Safety Controls for manual and automatic Water Heaters...Quality Brass Goods for Gas, Water and all Plumbing Lines.
KITSON COMPANY
1500 Walnut St., Phila., Pa.
Subsidiary of Welsbach Engineering and Management Corporation
U. S. Marine Corp. Photo A
BUY WAR BONDS

Filtrine WATER FILTERS

Prevent Dirty Water Troubles

FILTRINE really gets down to fine points. It removes not only rough, suspended material, but the finer bits of clay, rust and vegetable matter. It does a thorough job, day in, day out, for a lifetime. There is nothing to wear out, and the filter medium, when saturated, may be removed and replaced in a matter of minutes. You can't go wrong by specifying FILTRINE. Moderately priced, easily installed, it's the satisfactory answer to the poor water problem. Photographic laboratories find FILTRINE FILTERS a real advantage in eliminating specks in prints and producing better work.

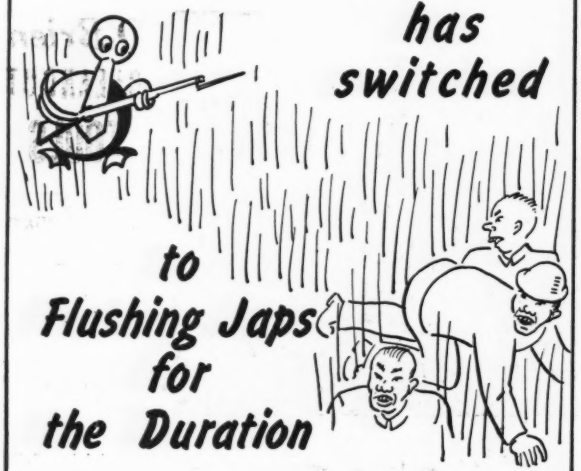
Air Field Photo Laboratories

FILTRINE FILTERS comply with specifications for Army and Navy air field photo laboratories. Specify them for your next job.

Immediate Shipment

Filtrine
MANUFACTURING COMPANY
53 Lexington Ave., Brooklyn, N.Y.

"DUCK BILL"



ROCKFORD BRASS WORKS
ROCKFORD, ILLINOIS
The Complete Line of "Plumbing Brass Goods Since 1890"

MILVACO MIKE SEZ:

One of the quickest ways to put a valve out of commission is to install it on a sagging line. The strain will distort the valve body and the disc will not seat accurately. It's just like trying to sleep on a chair all night. In the morning you'll have a stiff back, sore neck and aching muscles.

When you install a valve MAKE SURE THE LINE DOES NOT SAG.

Display the entire series of MILVACO MIKE cards. They're Free for the asking.

MILWAUKEE VALVE CO
MILWAUKEE WISCONSIN

Products, Methods . . .

TIME SWITCHES

(Continued from Page 90)

tion with supplying domestic hot water. As a war measure, many building owners are supplying hot water only during set hours of the day or night with corresponding reduction in fuel consumption.

STORM WINDOWS

An effective and low-cost fuel conservation measure is the installation of storm doors and sash. Roughly, a saving of about 20 gal of fuel oil or its equivalent per window, can be made by weatherstripping and hanging storm windows on previously loosely-hung windows. If windows are already protected by weatherstripping, the expected savings would, of course, be cut but it would still be an appreciable amount. Prof. G. L. Larson, Univ. of Wisconsin, has proved that weatherstripping alone can save 21 per cent of fuel; in combination with storm windows and doors 30.8 per cent saving can be realized.

OUTSIDE CONTROLS

Outside type temperature controls, installed in larger buildings, show greatest fuel savings in relatively mild and changeable weather. In such periods, they have been found to save up to 30 or even 40 per cent of previous consumption when the system was manually controlled.

One manufacturer reports an average saving of 28 tons of coal in systems which previously consumed 156 tons. On a percentage basis, 15 to 20 per cent saving is considered reasonable.

OIL BURNERS

Oil burners should be given particular attention in this fuel conservation campaign. Proper size and angle of fuel nozzle is important; the combustion chamber of the oil burner should be the proper size and baffling may make the unit operate more efficiently.

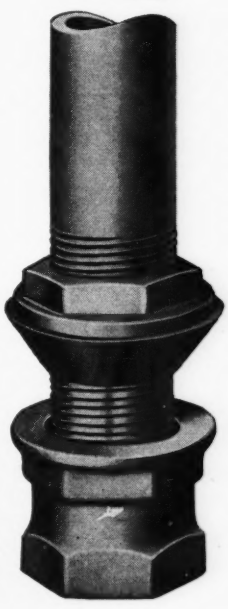
The oil tank filters, oil lines and strainers should be cleaned. The pilot light should be checked; unburned fuel may be going up the chimney if the light is not functioning properly.

Many factors make it impossible to forecast a possible savings with these measures but they will be considerable.

REPAIRS entrusted to your care deserve your prompt and efficient attention. Your skill and knowledge will protect the precious plumbing of this nation during the war. Avoid replacements and conserve essential metals, the reward is Victory.

Salter

H. B. Salter MFG. CO.
MARYSVILLE, OHIO
Masterpieces in Brass



NIGG did it FIRST!

FIRST— to use non-critical materials to eliminate brass.

FIRST— to produce a 100% Anti-Siphon Ballcock with non-critical materials.

FIRST— to design a ballcock with Adjustable Shank.

FIRST— to use a corrosion-proof Glass Plunger.

FIRST— to establish factories in the East and in the West to speed up deliveries.

AND MORE "FIRSTS" TO COME!

Look to NIGG for continuous improvement in ballcocks. It is the NIGG Policy to maintain continuous service to the Plumbing Trade, with representatives in all territories for better service to Supply Houses everywhere. Ask your Jobber!

SOLD BY ESTABLISHED PLUMBING SUPPLY HOUSES EVERYWHERE

CAST IRON BALL COCK

PLUMBING DIVISION
NIGG ENGINEERING CO.
GENERAL OFFICES: COVINA, CALIFORNIA
FACTORIES: CALIFORNIA AND OHIO

STRONG

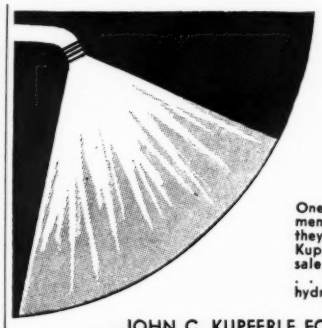
Where STRENGTH Counts MOST

Pipe jobs that assure the most lasting connections are those on which ATHOL Brass Ferrules, Unions, and Union Ferrules are installed. With ATHOL there's no breakage . . . no lost motion . . . no lost time! Specify ATHOL . . . place a trial order with your plumbing supply house today.

ATHOL

BRASS FERRULES, UNIONS AND UNION FERRULES

THE LEAVITT MACHINE CO., ORANGE, MASS.



They Are Going to Need A Lot of HYDRANTS

One of these days there will be a tremendous call for hydrants . . . and they won't forget Kupferle quality and Kupferle always through regular wholesale channel sales policy. Kupferle . . . the dependable line of out door hydrants.

JOHN C. KUPFERLE FOUNDRY CO. ST. LOUIS

KUPFERLE

GILCO

Automatic

OIL-BURNING WATER HEATERS FOR GOVERNMENT PROJECTS

J. L. GILLEN CO.

DOWAGIAC • • MICH.

Recommended By Master Plumbers Everywhere

★ ★ ★ for Dependable Performance

The CADWELL Line . . . .

- **FLOOR & CEILING PLATES**

  Army . . Navy . . Maritime and War Shipping Board . . and where climatic conditions make necessary (supplied on receipt of statement from consumer).
- **RELIEF VALVES**
- **AIR VALVES**

(Priorities Necessary)

★ *The* **BEATON & CADWELL** *Mfg. Co.*

Established 1894 **NEW BRITAIN, CONN.**

"Manhattan" Air Valve . . . Available from your wholesaler.

★SERVING *Our Nation Our Industry*

We're proud of this great opportunity... proud of the accomplishment of forging the tools for war and at the same time maintaining production of NewYork Air Valves for vital home front needs! You can count on us to continue to reach this objective just as long as it remains necessary.

NEW YORK AIR VALVE CORP.

611-621 BROADWAY

NEW YORK

• BARBER

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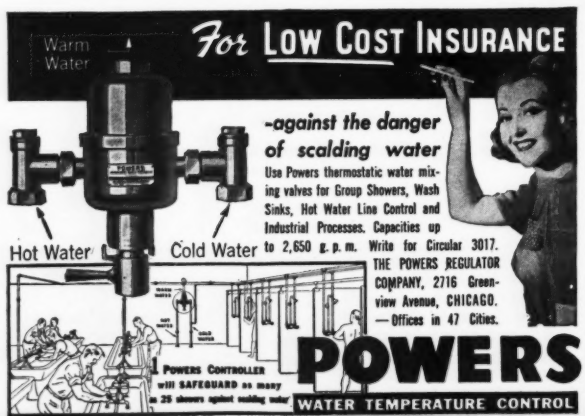

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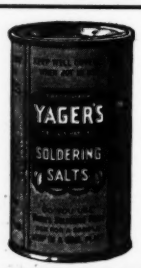

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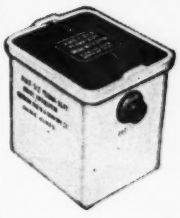

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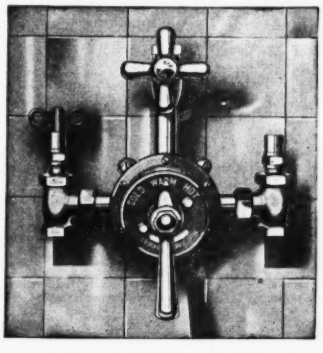

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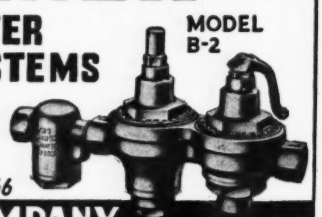
HOT WATER HEATING SYSTEMS

MODEL B-2



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Write for Bulletin No 66

KAINER & COMPANY

761 LEXINTON STREET...CHICAGO

Utica HOT WATER GENERATOR

For installation in boilers and furnaces. Cast iron 30-40-60 gallon capacity. Write for details.

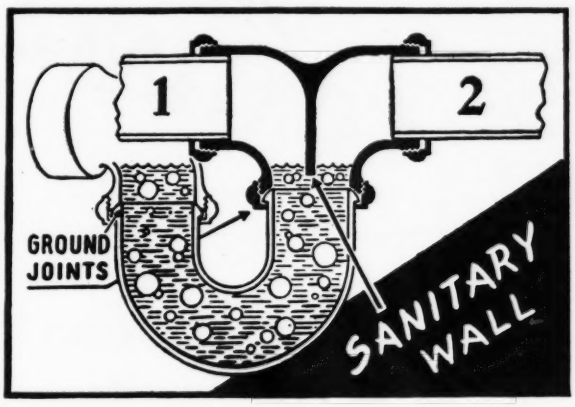
PARMELEE PUSH NIPPLES

Malleable and Steel RADIATOR and BOILER. Prompt shipment from Complete Stock.

ANY STYLE—AGE or MAKE Submit sample if possible.

UTICA RADIATOR CORP. 2222 DWYER AVE. UTICA, NEW YORK

Genuine "DUO" (REG. U. S. PAT. OFF.) Wastes



for SINK & TRAY COMBINATIONS & DOUBLE COMPARTMENT SINKS . . .

No. F-407

SEE DIAGRAM ABOVE

Drain water from one compartment (1) prevented from backing up into other compartment (2). Notice the Sanitary Wall!

The Genuine "DUO" has many Sanitary Features . . . Look for the name "DUO".

PEBELAC *The New Finish*

For effective protection against rust and discoloration, the surface of all M. S. LITTLE Ferrous Plumbing Products has a most attractive crackle finish, appropriately named PEBELAC.

THE "DUO" IS CATALOGED BY LEADING WHOLESALERS

MADE BY *M. S. Little*

The M. S. Little Mfg Co.
HARTFORD, CONN., U. S. A.

Helping to furnish
MORE TANKERS
to deliver "fighting" fuel

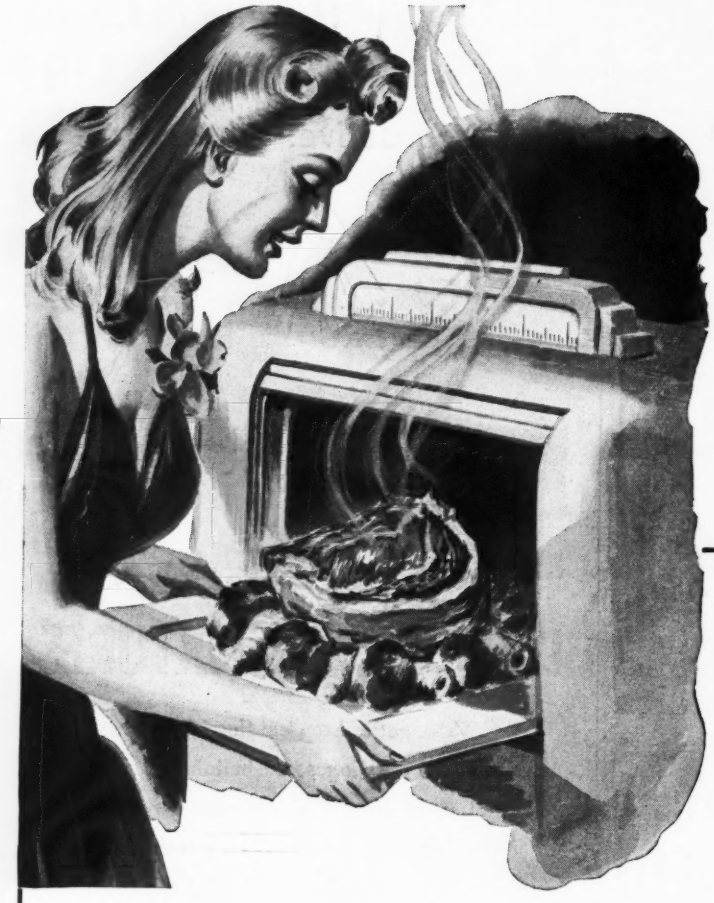
U. S. Maritime Commission Photo

DICK *Victory* FIXTURES

● We've got to keep 'em floating in order to keep 'em flying, so the building of more and more tankers is a vitally important job. America's great sea-going tankers are delivering "fighting fuel" to lubricate the engines of our tanks rolling across foreign soil and our planes flying through foreign skies. We at Dick Brothers are thankful for our privilege of furnishing those tankers to some extent, with fixtures that are proving to be "seaworthy" because of their quality and durability. We're rendering our very best, in the service of Uncle Sam. And at the same time we're doing our level best to fulfill the requirements of all who call upon us for service.

FIRST QUALITY PLUMBING BRASS GOODS SINCE 1897

DICK BROTHERS, INC.
READING, PA.



There's a GREAT DAY COMING!

ELECTRONIC COOKING will do in minutes what now takes hours

Imagine putting your roast in the oven as you sit down to dinner . . . and finding it ready to serve by the time you've finished your soup! Yet scientists predict that such speed . . . and economy . . . and convenience are only a few of the many benefits *electronic* cooking can bring to post-war homes.

Because this method generates heat from the *inside* at the same rate as from the outside, food can be cooked through with no danger of burning, no wasteful shrinkage, no loss of valuable juices. Weight and thickness make no difference, either . . . 100 lbs. can be cooked as fast as 1 lb. Instead of burned hands from hot utensils, electronic cooking concentrates the heat in the food being cooked—the utensil remains comparatively cool.

Delco Appliance salutes the scientists whose electronic applications promise so much for future home life. Our own use of electronics is now confined to war production, because *"Victory Is Our Business"* . . . but with peace, it will help us build new and finer Delco Appliances that you can sell to every home owner.

Delco Appliances include Automatic Delco-Heat (oil-coal-gas), Delco Water Systems, Delco-Light Power Plants and Delco-Light Batteries.

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